

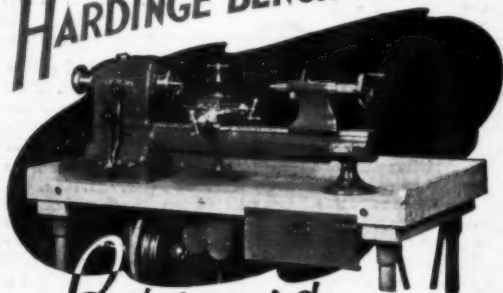
# HITCHCOCK'S *Machine Tool* BLUE BOOK

FOUNDED

JULY 1937

190

LABOR SHORTAGE  
*is compelling the use of*  
HARDINGE BENCH LATHES



*Because —*

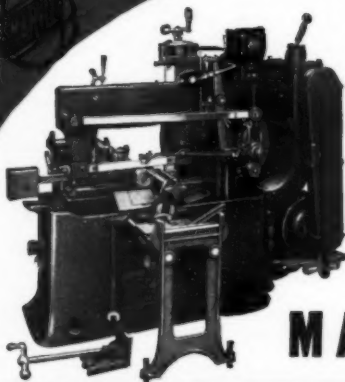
They permit an ordinary mechanic to do the work of a skilled mechanic—*rapidly*.

Send Coupon  
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Bulletin BB.

The preloaded ball bearing spindle construction gives complete free high spindle speeds and extreme accuracy. These features insure greater production and lower cost.

**HARDINGE BROTHERS, INC., - ELMIRA, N.Y.**  
**CHICAGO - NEW YORK - PHILADELPHIA - DETROIT - HARTFORD**

PUBLISHED AT 508 SO. DEARBORN ST., CHICAGO



*automatic  
production*  
**SAWING**  
*at*

**Ball  
Bearing  
Speed**

**MARVEL**

Cutting-off is altho it has always been a slow and costly operation, hard on tools and wasteful of stock. With today's automatic, high-speed MARVEL Saws it has become an easy, fast operation, especially when cutting quantities of identical pieces from bar stock.

Requiring no more attention than an automatic screw machine (*Saving labor*), the new MARVEL Nos. 6A and 9A Production Saws will feed to length and cut-off diameters up to 10 inches at the rate of 10 pieces of 8 inches round or 160 pieces of 1½ inches round every hour floor to floor (*Saving time*). With unbreakable High-Speed Edge Hack Saw Blades that are but a fraction of the width of a cutting-off blade, chip loss between pieces is materially reduced and the number of pieces per bar increased (*Saving stock*).

Built by MARVEL, the pioneer builders of automatic bar push-up machines, and strictly heavy-duty with full ball bearing construction, these saws have solved completely the "cutting-off problem".

*Send 3 Centime. Rec. R. for catalogue*

**Armstrong Blum Mfg. Co.**

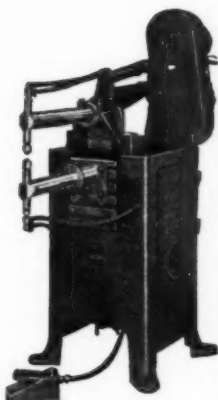
*"The Hack Saw People"*

**5841 Bloomingdale Ave.**

**Chicago,**

**U. S. A.**

# TAYLOR - WINFIELD



## "N" Type SPOT WELDER

**After 13 Years  
Better Than Ever**

Over 8000 in use in industry today prove the universal preference of large and small plants for this efficient and extremely flexible welding unit.

Variable Speed Drive standard equipment, providing speed range infinitely adjustable within 3 to 1 limits.

All sizes available in motor-driven, air or manually operated styles.

### **24-HOUR DELIVERY SERVICE**

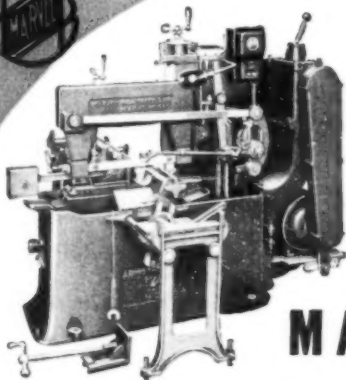
The "N" Type is one of the few welding machines made in sufficient volume to justify the use of jigs and fixtures and "Production Line" assembly methods. This provides interchangeability of parts and enables us to carry all sizes and capacities in stock. A machine ordered today can be shipped tomorrow.

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*Main Office and Factory,  
1052 Mahoning Ave., N. W.,  
Warren, Ohio*

*Branch Factory,  
14307 Third Ave.,  
Detroit, Mich.*



automatic  
production  
**SAWING**  
at  
**Ball  
Bearing  
Speed**

**MARVEL**

Cutting-off in a lathe has always been a slow and costly operation, hard on tools and wasteful of stock. With today's automatic, high-speed **MARVEL Saws** it has become an easy, fast operation, especially when cutting quantities of identical pieces from bar stock.

Requiring no more attention than an automatic screw machine (*Saving labor*), the new **MARVEL Nos. 6A and 9A Production Saws** will feed to length and cut-off diameters up to 10 inches at the rate of 10 pieces of 6 inches round or 160 pieces of 1½ inches round every hour floor to floor (*Saving time*). With unbreakable High-Speed Edge Hack Saw Blades that are but a fraction of the width of a cutting-off blade, chip loss between pieces is materially reduced and the number of pieces per bar increased (*Saving stock*).

Built by **MARVEL**, the pioneer builders of automatic bar push-up machines, and strictly heavy-duty with full ball bearing construction, these saws have solved completely the "cutting-off problem".

*Send Coupon No. 5 for catalog.*

**Armstrong Blum Mfg. Co.**

*"The Hack Saw People"*

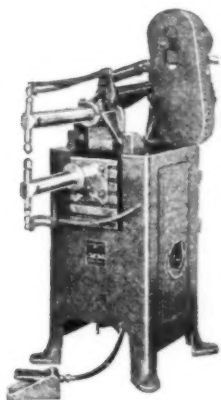
**5841 Bloomingdale Ave.**

**Chicago,**

**U. S. A.**



# TAYLOR - WINFIELD



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**After 13 Years  
Better Than Ever**

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Variable Speed Drive standard equipment, providing speed range infinitely adjustable within 3 to 1 limits.

All sizes available in motor-driven, air or manually operated styles.

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Scientifically heat treated to a true spring temper, "Rivett Mark" collets resist wear and hold their spring longer than collets of any other make. As standard equipment on all makes of lathes and millers, (see Rivett Bulletin 100B) they may be ordered for immediate delivery from the following stocks —

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# RIVETT

LATHE & GRINDER INC.  
BRIGHTON, BOSTON, MASS.

To save time and trouble, use QUICKMAIL COUPON  
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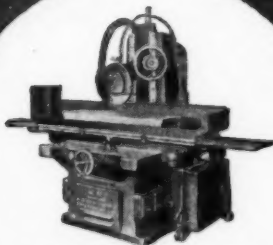
# HIGH SPEED HYDRAULIC FEED SURFACE GRINDERS

**Time Savings of 50% and More!**

One customer reports grinding time reduced from 12 hours to 30 minutes—a prominent automobile manufacturer reduced grinding time on louvre dies from 6½ hours to 35 minutes—a third customer increases production on small typewriter parts over 50%!

Longitudinal table speeds up to a maximum of 125 feet per minute are obtainable on these Grand Rapids High Speed Surface Grinders.

Rugged, one-piece column and base castings guarantee a permanent alignment between vertical head ways and cross saddle ways.



This is No. 65 in the series that covers every requirement. Use Quickmail Coupon No. 72 when you write for Bulletin.

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**GALLMEYER & LIVINGSTON CO**  
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**Collets for your Lathes and  
Milling Machines**



**All types and sizes carried  
in stock for prompt shipment**

Collets for your lathes and milling machines when you want them . . . instantly . . . promptly! **HARDINGE** Collets—recognized for accuracy and durability since 1890—are held in stock in sufficiently large quantities in Elmira, Chicago, New York, Detroit and Los Angeles to insure immediate delivery at any time.

This prompt service includes **HARDINGE** Collets for American, Burke, Cataract, Flather, Hendey, LeBlond, Monarch, Porter - Cable, Pratt & Whitney, Rockford, Sebastian, Sidney, South Bend, Sundstrand, Van Norman and all other lathes and milling machines.

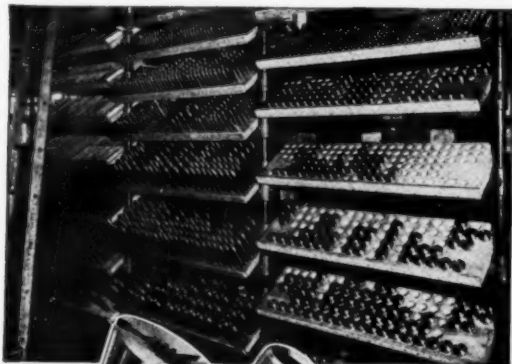
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**—ALWAYS SPECIFY HARDINGE COLLETS—**

**HARDINGE BROTHERS, Inc. . . . ELMIRA, N. Y.**

## **D FINGER SECTION**

**Collets and Feed Fingers for your Automatic and Hand Screw Machines**



**Standard sizes in stock  
for immediate delivery**

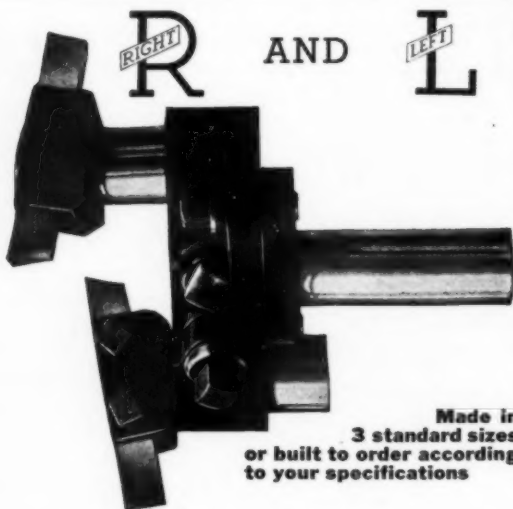
Typical MORRISON quality and quick delivery are planned to meet with the satisfaction of all users of Collets, Feed Fingers and Pads for Brown & Sharpe, Cleveland,

Cone, Gridley, National Acme, New Britain, Davenport and all other automatic screw machines. MORRISON Collets also for Bardons & Oliver, Foster, Garvin, Pratt & Whitney, Warner & Swasey, and all other hand screw machines.

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Made in  
3 standard sizes  
or built to order according  
to your specifications

## **Save On Your Set-Up Costs With This Combination Tool**

By using various adjustments, one R & L turning tool can be made to perform a variety of operations, singly or together, thereby saving not only tool costs but time required for setting up machines. Extremely fine adjustments are provided both on the tool and on the pressure of the burnishers.

*Ask for complete details*

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## **R AND L TOOLS**

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# Turning Tool



Entire tool is made  
of heat — treated  
alloy steel

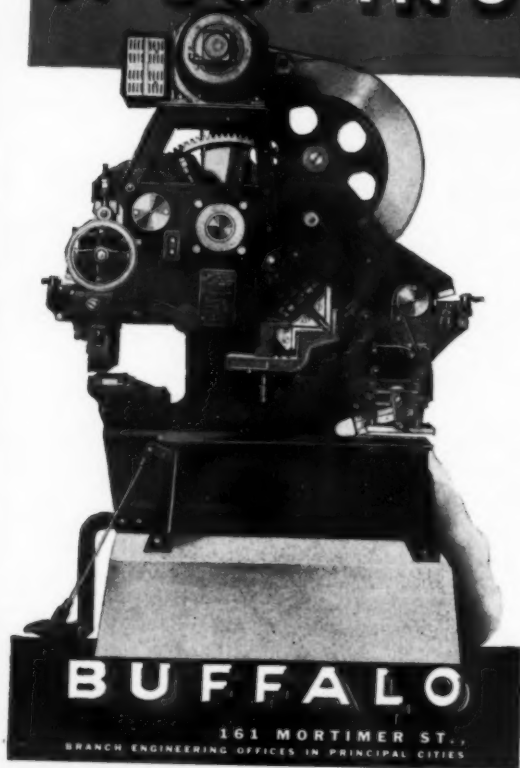
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Speed in making set-ups is essential to economy. An R & L Turning Tool can be assembled and adjusted quickly for almost any kind of turning work. Tantalum carbide faces on the backrest act as a burnisher, eliminating rollers and misalignment due to roller wear and producing a highly polished surface.

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BRANCH ENGINEERING OFFICES IN PRINCIPAL CITIES





You can do it only with  
*"Buffalo"* **UNIVERSAL  
IRON WORKERS**

**T**HIS is an exclusive feature available only in "Buffalo" Universal Iron Workers. Saves time, saves money, speeds production.

"Buffalo" Universal Iron Workers are available in a wide range of sizes, but whether large or small, each one offers the finest in design, ruggedness, and efficient operation. All frames are made of "Armor-Plate" electrically welded steel and are unconditionally guaranteed against breakage.

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**PEDESTAL COMPARATOR**



**INSPECTION  
SPELLS  
PERFECTION**  
WHEN PARTS ARE  
CHECKED ON A J&L  
COMPARATOR

**THE J&L Comparators** meet the inspection requirements of tool room, laboratory, and production line.

They may be used to compare objects against a master outline, or to make direct measurements of height or depth and lead or spacing. They will measure angles within 5 minutes of arc.

The J&L Comparators are *the* machines on which to check each operation, on every part, so that your final product will bear an assured O. K. — let inspection spell perfection.



**BENCH COMPARATOR**

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**SPRINGFIELD, VERMONT, U. S. A.**

*The Punch Press Sensation!*

# **SUPER SPEED**

No Vibration  
INSTANT STOP  
Quick Change

## **PUNCH PRESS**

ACCURACY  
Feed Control  
While Punching

**AN ENTIRELY NEW PRINCIPLE**

*1,000 BLANKS A MINUTE*

**—ONE DIE—**

**HOW?** By using the SUPER SPEED PUNCH PRESS with its continuous feeder which never allows the stock to stop.

No cams, pawls or ratchets.

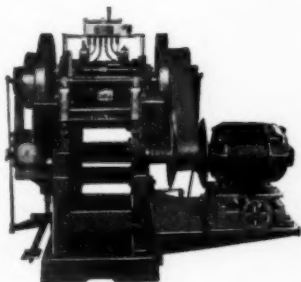
Greatest advance in speed since inception of punch presses.

Guides below punch level.

Variable speed control.

Operates with a single die. No costly "ganging" of dies.

High production means minimum labor cost.



Its production value has been fully proved.  
Send samples of blanks for guaranteed production.

**NOW BEING USED BY SOME OF THE LARGEST  
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**A MACHINE FOR AUTOMATICALLY  
FEEDING AND SETTING CLINCH NUTS**

- *Set clinch nuts in a machine made for just that purpose.*
- *Set them easily and efficiently.*
- *Realize the savings that this method will make for you.*

The nut is automatically placed in the anvil. The work is placed over the nut. A slight pressure on the foot treadle starts the machine operation to set the clinch nut and supply another nut to the anvil. May we send you a circular describing these machines?



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**605 N. Mechanic Street** **Jackson, Michigan**  
**European Office: GASTON E. MARBAIX, Ltd.**  
**Vincent House, Vincent Square, London S.W.1, England**

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1905

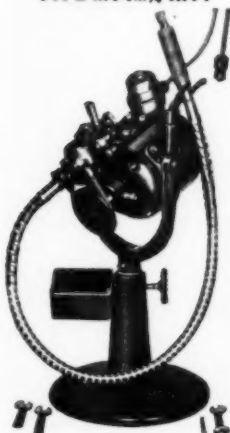


1937

## FLEXIBLE SHAFT MACHINES

We illustrate herewith our new style bench type machine for tool and die makers, with universal swiveling mounting. Also right angle hand piece.

**TYPE MY4... $\frac{1}{4}$  H. P.**



This machine is furnished in two combinations of speeds.

1700 — 3000 — 5200

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**RIGHT ANGLE HAND PIECE**



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Motor Driven

# LATHE



Model 117-C, South Bend  
Underneath Belt Motor Driven  
Lathe 16" swing by 6' bed in-  
cluding Equipment as **\$869**  
shown.....

The New South Bend back-geared screw cutting Lathes are used in leading manufacturing plants and machine shops for work requiring the highest accuracy and precision in production and tool work.

Write for general Catalog No. 96 giving details and full specifications. Sent Free Postpaid.

## SOUTH BEND LATHE WORKS

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PRICES OF OTHER POPULAR SIZES



Size and Type Lathe	Between Centers	Ship's Weight	Less C'shaft	Motor Drive
9"x3' Workshop Bench Lathe....	17"	320	\$ 85.00	\$116.00
9"x3' Junior Lathe.....	16 1/2"	600	192.00	294.00
9"x3' Standard Change Gear.....	16 1/2"	655	257.00	359.00
9"x3' Quick Change Gear.....	16 1/2"	655	297.00	399.00
11"x4' Standard Change Gear.....	24"	920	339.00	487.00
11"x5' Quick Change Gear.....	36"	990	408.00	556.00
13"x4' Quick Change Gear.....	16"	1410	443.00	636.00
15"x5' Quick Change Gear.....	24 1/2"	1460	529.00	769.00
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# SOUTH BEND Precision LATHES

# Look For This Mark Before You Buy



## Imperial Roller Bearing Punches

Offered in 3 sizes. Will work inside 90 degrees. Quick changing for punches and dies. No cams to wear. Stripping action is positive.



## No. 16 Bench Punch

Capacity  $\frac{3}{8}$  inch through  $\frac{1}{4}$  inch iron. Depth of throat  $3\frac{1}{2}$  inches. Height of throat  $\frac{3}{8}$  inch. Length of handle 22 inches. Furnished with or without work table and equipped with 3 punches and dies in  $\frac{7}{32}$ ,  $\frac{9}{32}$ , and  $1\frac{1}{32}$  throat depth unless otherwise specified. Same style made in  $6\frac{1}{4}$  inch size throat depth.



*Send Coupon No. 42  
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Whitney catalog*

**Made by the World's Largest Manufacturers  
of Punches and Shears.**

**Whitney Metal Tool Co.**  
**ROCKFORD, ILLINOIS**

**SAVE** *TIME  
and  
TROUBLE* **!**

**GET ACTION** on your requests for catalogs and detailed information.

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When you see a machine in The Blue Book on which you'd like information, **GET ACTION ON YOUR INQUIRY BY QUICKMAIL**—giving the manufacturer your name, the firm for which you work and your position, preferably on your letterhead.

The handy Quickmail Coupon is a mailing label addressed to the manufacturer. The specific information which the Coupon will bring you is stated on the reverse side. It is gummed like a postage stamp. Use the Quickmail Coupons for Speedy Action, But . .

**BE SURE TO GIVE YOUR NAME, POSITION**



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**THEN MAIL—It's as  
simple as 1-2-3.**

**AND FIRM —**



# PROCUNIER



**HIGH SPEED**

**PRECISION**

## **TAPPING ATTACHMENTS**

**WITH THE NEW**

**"TRU-GRIP"  
TAP HOLDER**

The most sensible tap holder that ever gripped a tap.

ONLY Procunier tappers have the Patented Three-Point Balanced heat treated Gear Reversing Mechanism. This special feature distributes the pull among three gears instead of one, reducing strain and wear to the minimum and giving longer life.

ONLY Procunier tappers have the new "Tru-Grip" Tap Holder.

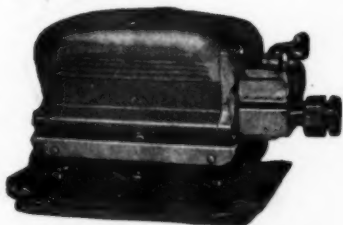
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Up to \$2,295 Yearly Savings  
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Weight 5½ pounds

The Sterling by its oscillating action is filling a decided need in industry, substantially cutting labor costs, increasing production schedules and enabling workmen to turn out a better finished product, without ridges, ripples or chasing. Replaces hand sanding and rubbing on wood, metal, fabric, leather, castings, stampings and composition surfaces. Designed for WET and dry work on CURVED and flat surfaces.

*Investigate this modern, proved device.  
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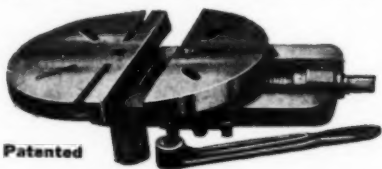
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303H DONOVAN BUILDING,

DETROIT, MICHIGAN

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## **Combination Drill Table and Vise**



**Patented**

### **GUARANTEED To Save Its Cost in Labor Every Six Months**

To save time with quicker and more accurate set-ups in your shop, install a Modern "Combination." It's safer and easier to use, handles difficult jobs without blocks, clamps or awkward plates and helps to prevent accidents by eliminating dangerous holding by hand. Manufactured in models to fit every drill press. Write today for complete information on the "Combination" and our 30-day trial, giving dimensions of the table you wish to replace.



### **30-DAY FREE TRIAL**

Costs you nothing. If you are not satisfied in 30 days, we will pay the freight both ways.

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**MODERN MACHINE TOOL CO.**  
**JACKSON, - - - MICHIGAN**

**Manufacturers of the "Modern" Cutting-Off Machine**

# "Give Me End Mills

with the

## PUTNAM

'Hi-Speed'  
Trademark"



"Putnam Hi-Speed" is Stamped In the Metal of Every Putnam Tool. Look For It!



You don't need an X-Ray eye or an uncanny sense of judgment to select perfect end mills on sight alone. The "PUTNAM HI-SPEED" trademark on any end mill is positive assurance of fast, accurate cutting performance and long, trouble-free life. One trial will convince you that PUTNAM END MILLS will meet your most exacting requirements and also effect real production savings.



Send Quickmail Coupon No. 67 for complete catalog of our full line of end mills, end mill holders, reamers, counterbores and special tools. It's your guide to precision tools that cut faster and last longer.

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# LOWER COST and FINER WORK

Through the Use of These Tools Designed For Precision Work on B. & S. Automatic Screw Machines



## Banner Swing Tools

Entirely free from "end play" due to the fact that they are designed with a large head on the fulcrum screw. Head of tool moves between two flat surfaces instead of on a shaft. Oil hole is provided for lubricating the head. For straight or taper turning these tools are without an equal, as they are extremely accurate and provide a fine finish. When used as cut-off tools produce superior results by reducing the amount of burr. Exceptionally rigid, they assure longer life of tool bits and permit a heavier feed than is usual.

All sizes carried in stock for immediate shipment.



## Banner Recessing Swing Tools

For precision work and internal forming Banner Recessing Swing Tools are superior, embodying the same features as Banner Swing Tool design. Constructed so that chattering is entirely eliminated. Absolute rigidity assures accurate, maximum production. Tool bits have longer life and will not snap off.



## Tool Bits for Swing Tools

Made for use in conjunction with Banner Swing Tools, but will also fit B. & S. Holders. Manufactured from high speed steel, tool hardened. Two distinct types, ground to meet your particular requirements.

Full Information Given in Banner Catalog  
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*3 and 4-Way Operating Valves*

## FOR AIR, WATER AND OIL



FOR OIL OR WATER



FOR AIR

Sturdy yet simple in construction, NOPAK Operating Valves offer long, efficient operation without maintenance cost, and with absolute freedom from leakage.

The NOPAK flat disc design provides advantageous port spacing, which insures positive, accurate control with both throttling or quick opening action, as desired.

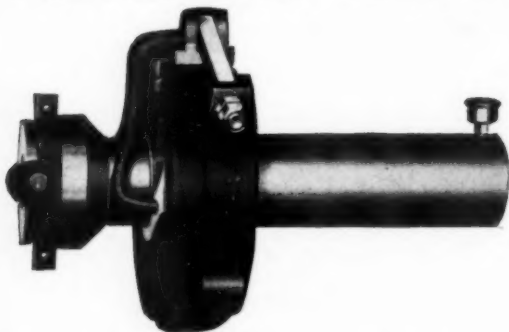
- ★ No Packing
- ★ No Maintenance
- ★ Leakproof
- ★ Protected Disc and Seat
- ★ Quick or throttling action, as desired

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**GALLAND-HENNING**  
MANUFACTURING COMPANY  
2753 South 31st Street Milwaukee, Wisconsin

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## ***Strong—Simple—Efficient***

Simple, easy mounting; adjustment merely taking up on a nut; friction band wraps in complete peripheral contact about the drum, and when Clutch is released the band springs back into a machined guide which holds it concentric with the bore providing clearance between the friction surfaces when the Clutch is idle; engagement so easy it could be operated with the thumb; drag-free idling, instant release.

These efficiency operating features, plus husky construction and interchangeable parts, make for completely satisfactory Clutch service.

Send for details—ask Conway engineers for special data to help you find the *right* Clutch. Have you Bulletin No. 36?

**PATENTED IN U. S. A. AND CANADA**

## **THE CONWAY CLUTCH CO.**

*Also manufacturers of the splendid Conway Disc Clutch*  
**1341 Queen City Ave., Cincinnati, Ohio**



# **Siewek** Rapid Clamping **Drill Jigs**

**A TYPE FOR EVERY JOB!**



Stick coupon No. 37 to your firm letterhead and sign your name and title for catalog showing the complete Siewek line of rapid clamping drill jigs.

**SIEWEK TOOL CO.,** **FERNDALÉ,**  
**MICHIGAN**

# NEW METHOD FOR REMOVING BROKEN BOLT ENDS FROM DEPTHS



without dismantling or  
expensive delays

Three easy steps with **RIGID**  
"LonGriP" and your broken  
threaded ends are OUT!

FIRST — Drill a small hole clear  
through the broken end using a snug  
fitting **RIGID** Drill Guide for  
precision centering. This centering  
hole is for the larger drill to follow.



SECOND — Remove Drill Guide.  
Drill out the small center hole to  
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husky "LonGriP" straight fluted  
extractor.



THIRD—Drive the "LonGriP" ex-  
tractor into the thin hollow remain-  
ing shell and turn it out. No slip-  
ping, no reaming. Does not expand  
or distort sidewalls of shell no matter  
how thin or how far the tool is  
driven in.

Sets for all sizes of studs and  
screws and various depths.

ASK YOUR JOBBER TO SHOW YOU THESE  
REMARKABLE TROUBLE-SHOOTING TOOLS

**RIGID**  
**LonGriP**  
STRAIGHT-FLUTED  SCREW AND PIPE  
**EXTRACTORS**

**THE RIDGE TOOL CO., ELYRIA, OHIO**

**"WE'RE SAVING  
\$100 TO \$300  
MONTHLY WITH  
OUR NEW**



## **LINCOLN WELDER"**

"This new Lincoln welds anything that comes into our shop—tool steel, cast iron, aluminum—light and heavy parts of all kinds. We now do our own fabrication and welding repair work, saving several hundred dollars every month. Honestly, this little Lincoln welder is the most valuable machine in our shop," says the foreman of a moderately sized machine shop in Toledo, Ohio.

Electric power for welding with this Lincoln welder usually costs as little as 5c per hour. It welds 2 to 3 times faster and easier than other welding processes. You can pay for this high-grade arc welder out of a few months' savings. Easy installments can be arranged. Mail the coupon.



**FOR LIGHT AND HEAVY MACHINE  
SHOP WELDING THE LINCOLN "SA-150"  
Range 45-150 amps. with Plus-Zone Range.**

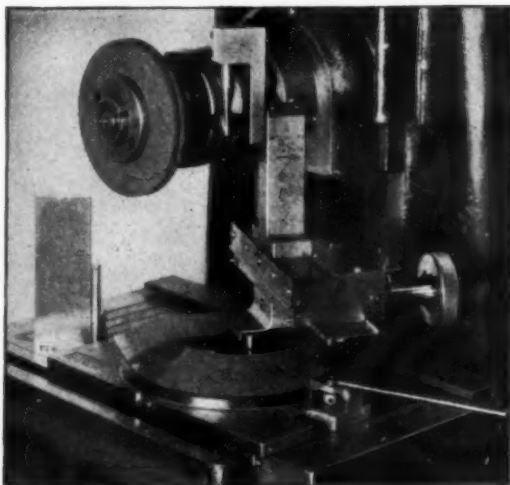
**THE LINCOLN ELECTRIC CO., Dept. AD-408, Cleveland, Ohio**  
Send a free copy of Bul. 314 and details on the Lincoln  
"SA-150" Welder.

Name

Company

Address

# **The Vinco Angle Tangent to Radius Dresser** **for** **Internal, External and Surface Grinding Machines** *Patented June 5 1934, other patents pending*



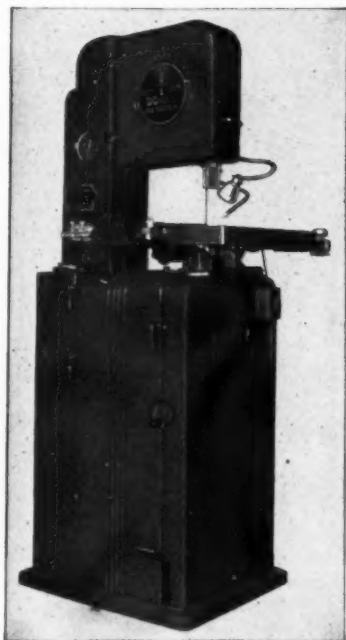
## **ACCURACY AND ECONOMY**

The Vinco Dresser was designed for the accurate and economical dressing of angles and radii tangent on abrasive wheels. It functions perfectly for it has the basic patented feature of dressing angles and radii from the same axis without moving the diamond, angles and radii are always tangent. Angles are accurate for the Index Plate and Vernier are graduated on a Vinco Master Dividing Head to a one ten thousands of an inch accuracy. It has adjustable stops, the index plate can be set at any desired angle. The cut above shows the Dresser fitted with a Vinco Special Attachment that permits the dressing of complete half circles from .050 to .565 radii. The Dresser fitted with the regular diamond will dress all angles and radii tangent. The Vinco Dresser is precision made, all parts subject to wear are hardened, ground and lapped. It is guaranteed to be satisfactory.

*Send Coupon No. 48 for Descriptive Circular*

**VINCO TOOL COMPANY**  
**7348 CENTRAL AVE., DETROIT, MICHIGAN**

# METAL MASTER



**DOALL CONTOUR SAWING** has an even wider application with this improved combination tool room machine.

*Use Quickmail Coupon No. 65 on business letterhead for full information and demonstration.*



**CONTINENTAL MACHINE SPECIALTIES**  
1201 South Washington Avenue  
MINNEAPOLIS MINNESOTA



**From the smallest standard  
to the largest special**

## **DIAMOND-GRIP COLLETS**

**grip tighter under less tension**

● Advantages of DIAMOND-GRIP SERRATIONS are delivered by all sizes and styles of Sutton Collets. If your job requires special collets, send work and machine specifications. A quotation and layout of DIAMOND-GRIP COLLETS specially engineered to your job will be submitted promptly.

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**SUTTON TOOL CO.,** 2836 W. Grand Boulevard,  
DETROIT, MICHIGAN

# END MILLS

for All Purposes

## SHEAR CUT END MILLS

YOU will find an end mill for practically every job in the standard line of Progressive Shear Cut End Mills. They will give accurate, economical service due to the careful, constant attention given to the workmanship and material used in their manufacture.



SEND us  
your blue prints  
on special end mills.

Our many years of experience in the design and manufacture of standard Progressive products is always at your disposal without any obligation on your part. We guarantee that only the best of materials are used and the finest workmanship. We can quote very attractive prices and assure prompt delivery.

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**PROGRESSIVE TOOL & CUTTER CO.**  
FERNDALÉ, MICHIGAN

**SPEED UP  
NUT TURNING**

**WITH THE**

**FAVORITE**

**REVERSIBLE RATCHET**

**WRENCH**

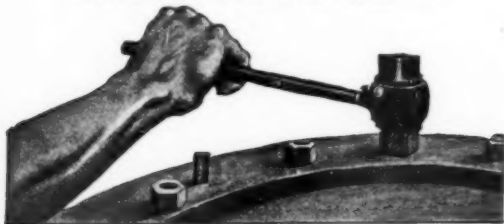
Try the "FAVORITE" on a nut that has been tightened by an ordinary wrench and see how many more turns you can take up on it before it is securely seated.

The "FAVORITE" is a time-saver, with its straight-ahead ratchet motion. By throwing pawl, reverse action is instantaneous.

The "FAVORITE" turns two different-sized nuts in each head—one on each end. A distinct saving in number of parts to hold in stock.

Opening clear through head for a free passage of bolt.

*Send Quickmail Coupon No. 35 for full particulars.*



**GREENE, TWEED & CO.**

**109 Duane St.,**

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**SOLE MANUFACTURERS**



# HANDY

*As His  
Steel Scale*



The mechanic with a Stanley Flexible Shaft Grinder in his tool kit is ready to tackle scores of jobs. Burr off rough castings or put "finishing touches" on a die; nose into close quarters or grind away at a big job. This tool has ample power to drive a 1½" wheel on a tough surface. •

- ★ ¾ h.p. Universal Motor, 18,000 r.p.m.
- ★ 42" Rubber Reinforced Flexible Shaft
- ★ Precision Ball Bearings in Handle Piece
- ★ Combination Bench and Overhead Holder

The specifications will tell you why this tool will deliver full production service. Ask your Stanley distributor for a free demonstration, or write for Catalog 64M. Stanley Electric Tool Division, The Stanley Works, New Britain, Conn.

## STANLEY



## ELECTRIC TOOLS

*A Complete Line For Industry*

*"Cost Less Per Year"*

# "HALLOWELL" STEEL TOOL STANDS

These stands go right to the scene of the job . . . keep tools safe and in order, eliminate the confusion of the old-fashioned, traveling tool box. Time savers, money savers—they have a definite place in your shop.

**Fig. 705—"Hallowell" Steel Tool Stand. With or without casters. Very handy around machine shops, service stations, garages, etc.**



**MAIL THE  
COUPON FOR  
COMPLETE DETAILS**

## STANDARD PRESSED STEEL CO.

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JENKINTOWN, PENNA.

**Box 559**

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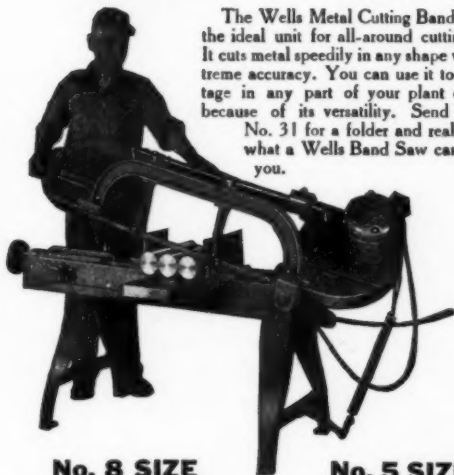
*Send me your catalog showing "Hallowell" Steel Tool Stands and other Factory Furniture.*

**Mr.** ..... **Title** .....

**Firm** .....

**Address** .....

*Band Saw Efficiency  
at its peak —  
It's a WELLS!*



The Wells Metal Cutting Band Saw is the ideal unit for all-around cutting jobs. It cuts metal speedily in any shape with extreme accuracy. You can use it to advantage in any part of your plant or shop because of its versatility. Send coupon No. 31 for a folder and really learn what a Wells Band Saw can do for you.

**No. 8 SIZE**

8 in. diameter round  
or 8 in. by 16 in. flat.

**No. 5 SIZE**

5 in. diameter round  
or 5 in. by 10 in. flat.

**WELLS MFG. CORP.** Three Rivers,  
Michigan



FOR ACCURACY  
DEPENDABILITY  
and  
QUICK DELIVERY

*Write for a set of  
Colonial Specifica-  
tion sheets and prices*

COLONIAL BUSHINGS, INC.  
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Detroit, Mich.

***For specifications sheet and price lists  
use Quickmail Coupon No. 55.***

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# **Consider Results— when you buy Equipment—**

Milling Machines

Grinding Machines

Screw Machines

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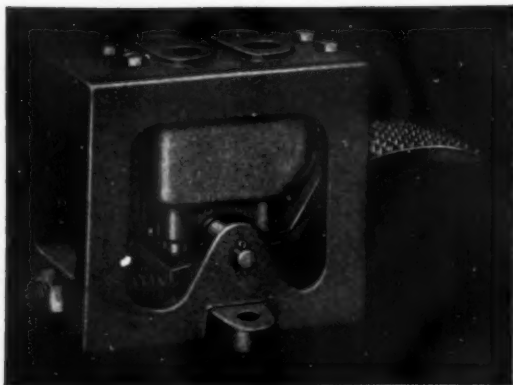


Have you our general catalog  
No. 140? A copy gladly  
sent on request. Brown &  
Sharpe Mfg. Co., Providence,  
R. I., U. S. A.

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## **BROWN & SHARPE**

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# ROSS Operating Valves

## MODEL ST

**Four-Way, Foot Controlled, Non-Locking Type**  
for the control of single and double acting cylinders

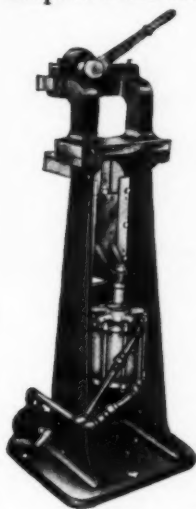
Made also in hand, mechanical and solenoid controlled types. All parts interchangeable between different models in like sizes—that means small inventory of spare parts.

*Send Coupon No. 32 for new Catalog.*

**Ross Operating Valve Company**  
6484 Epworth Blvd., Detroit, Mich.

# **HI-DUTY PNEUMATIC MARKING MACHINE**

This is a light, general purpose hand marking machine for use on flats, rounds and irregular surfaces, which is supplemented with an air cylinder to take the place of the foot pedal for applying pressure to



raise the work table to the lettering tool. Air from the shop line is used and the four way foot valve assures fast operation. Machine uses solid flat or round dies, as well as adjustable type, in flat or knurl type holder.

Advanced business methods demand improved records of metal fabrications and this machine makes marking operations quick and simple. Part numbers — order numbers — manufacturer's name and other important data marked on your products will mean permanent records, to last the life of the part. This general purpose marking machine will help you.

**Send Coupon No. 70 for complete catalog of our full line of Marking Tools, Machinery and Equipment.**

*Designed and Built By*

**GEO. T. SCHMIDT, INC.,**

**1802 Belle Plaine Avenue,**

**Chicago, Illinois.**

**Builders of Marking Equipment since 1895.**

**ADJUSTABLE**  
*While Running!*



**NEW**  
*Absolutely Different*

## **THE PRECISION UNIVERSAL TOOL HEAD**

does not need an introduction! It has proved itself to have **SPEED, RANGE, EFFICIENCY** and **ADJUSTABILITY**, at all times and at all speeds, **WITHOUT STOPPING EITHER TOOL OR MACHINE!**

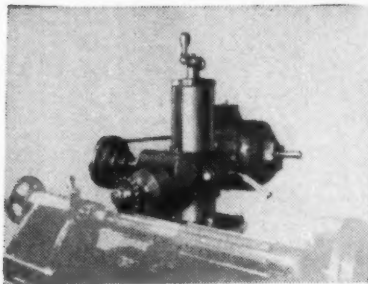
**ONE COMPACT SIZE** handles all diameters, internal or external from  $1/16$  to  $16''$ . For Boring, Facing, Recessing, Trepanning, Undercutting, etc.

**Bulletins sent on request. When you write,  
use Quickmail Coupon No. 60.**

**THE PRECISION TOOL COMPANY**  
**Bridgeport, Connecticut**



# ★ IT'S AMAZING!!! The MASTER Lathe Converter ★



Easily and quickly  
attached to an ordinary  
engine lathe.

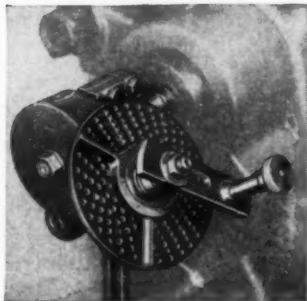


Does all milling  
operations such  
as: gear work,  
spline work,  
broaching key-  
ways, hobbing  
etc. Grinding at  
all angles, internal  
or external.

**No Dismantling of Lathe — Fits on  
compound same as your tool post.  
Not "Just Another Lathe Attachment"**

**USE QUICKMAIL COUPON NO. 44**

**The MASTER Geared Type Dividing Head ★**



Fits into rear  
open end of lathe  
spindle. Has 40  
to 1 reducing  
gear—counting  
indicators, three  
plates allowing  
720 divisions.  
Collet furnished  
to fit your spindle.

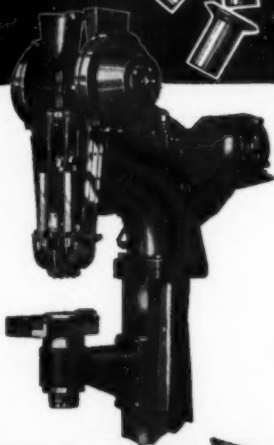
**MASTER MACHINE & TOOL CO.**  
**NORTH KANSAS CITY, MISSOURI**

# 4 RIVETS SET AT ONE TIME AUTOMATICALLY

● Originally developed for a large car manufacturer, the same application is now available to general industry. It sorts, feeds, inserts and sets 4 rivets with a single pedal operation. STILL LOWER ASSEMBLY COSTS ARE NOW PRACTICAL. Tell us your problems and send sample assembly with inquiry, if possible.

*Single, Double, Triple and Quadruple Rivet Setters for Tubular and Split Rivets*

**Chicago**  
**RIVET & MACHINE CO.**  
 1855 S. 54th Ave.  
 Cicero P. O. Chicago, Ill.



**TUBULAR AND SPLIT RIVETS—ALL METALS**

## Use QUICKMAIL COUPON NO. 56

It will bring you our rivet price list and illustrations of Chicago Automatic Rivet Setters. On specific production problems write letter and send sample assembly or blue print.

# HITCHCOCK'S *Machine Tool* **BLUE BOOK**

**Selected  
Circulation**

**25,000  
Monthly**

**JULY, 1937**

**THIRTY-SECOND YEAR**

## **Prospects for Summer Business Better Than Usual**

The outlook for machine tool manufacturers continues to look good for this summer. Although the index of machine tool orders for the month of May declined to 208, it returned only to the March level, leaving the average of incoming business for the first five months of the year still 86% ahead of the same period for 1936.

Strikes and sit-downs have aided rather than hindered most machine manufacturers, since industries whose production has been delayed by labor troubles are now relying on the purchase of modern, high speed equipment to make up for the lost time and to compensate for higher labor costs.

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*Published By*

**Hitchcock Publishing Co.**

**508 S. Dearborn St.,**

**Chicago, Ill.**

*Consult the Classified Finding Index for your requirements*

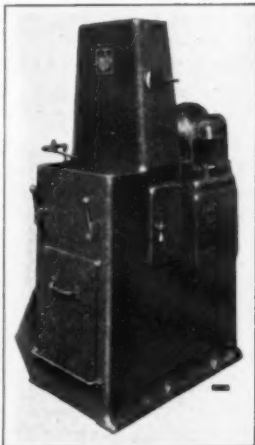
## New Type PD (Pull Down) American Broaching Machine

The American Broach & Machine Co., Ann Arbor, Mich., Division of Sundstrand Machine Tool Co., Rockford, Ill., announce a new broaching machine which is shown in the accompanying illustration. An illustrated leaflet, which the manufacturer will gladly send to any one interested, sets forth the advantageous features of the new machine.

Briefly; the heavy, compact base and column provides rigid support for work and machine elements and encloses the operating mechanism. The pulling ram is integral with the hydraulic cylinder and slide-ways, equipped with American automatic broach puller. The slide-ways have long bearings on hardened and ground steel, which entirely surrounds them throughout their entire travel, making for long life and retention of accuracy.

Completely submerged in oil in a separate compartment of the base, the Sundstrand hydraulic unit supplies uniform oil flow at correct pressures and in suitable volume for the smooth, powerful cutting stroke and rapid return. The hydraulic circuit includes an adjustable safety valve and is precisely controlled by a specially designed four-way valve.

In operation, the work-piece is placed on the pressure plate, and the broach is passed through the work into the pulling head. The operator must place his right hand on the operating lever and left hand on the safety lever simultaneously to cause any movement of the broach. When the part is broached, the operator re-



(Continued on Page 48)

# DO IT—

## Better—Faster—for Less!

with **ODIN UNIVERSAL**

**Precision Vises  
Swivel and Plain**

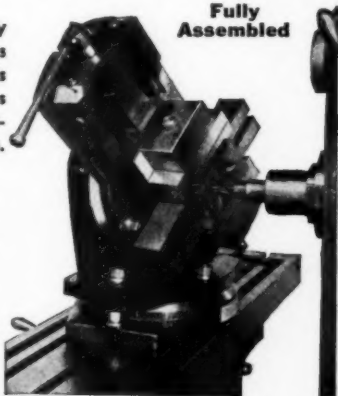
with Interchangeable Jaws and  
Hardened and Ground Parallels

They quickly pay  
their costs in savings  
on High Tool Costs  
—Expensive Fixtures  
—Patterns and cast-  
ings—Extra Set-Ups.

**Fully  
Assembled**

Investigate the  
money saving  
possibilities of  
**ODIN VISES**

Send Quickmail Coupon  
No. 71 for full facts  
and prices.



Let us show you how to make cheaper and  
better jigs and fixtures at a greatly reduced  
cost—with a great saving in time.

**ODIN UNIVERSAL**  
CORPORATION  
CHICAGO

Sales Division  
110 S. Dearborn St.,

Telephone  
Franklin 3281

moves it, returns ram to the starting position, lifts out the broach and is ready for the next cycle. The machine is readily changed from one type of job to another by substituting suitable broach-guides and broaches. Adjustment of stroke-length is made easily upon opening door at side of column. Pressure in the hydraulic circuit may be observed at any time by opening the shut-off cock which protects the fan-type gauge. A spout at the lower left-hand side of the machine facilitates chip removal.

A standard 5 h.p., 1800 r.p.m., motor drives the machine through multiple Vee belts direct to the shaft of the Hydraulic Unit. Motor is mounted away from dirt and chips, and a substantial guard encloses the drive to the hydraulic unit and coolant pump.

Quickmail coupon No. 64 fixed to your business letter head will bring an illustrated bulletin giving a further description of this machine.

## **Wells Produces a New Upright Saw**

The Wells Mfg. Corp., of Three Rivers, Mich., have developed a new upright saw designated as No. 7-B, particularly adapted for foundry work.

With nine speeds ranging from 60 to 1400 ft. per minute, the new saw is so flexible that it lends itself to a wide range of work. Throat clearance is 14 inches vertically and 14½ inches horizontally. The table is arranged to tilt 45 degrees right, and 10 degrees left.



The saw may be used in a rigid upright position for sheet metal, pattern work, sawing sprues off castings, etc. The upright saw frame is hinged at the bottom and may be released and fed into the stock automatically. Stock is clamped on the table with a vise which is provided, or by using the T-slots and clamps a greater variety of work may be done.

*(Continued on Page 50)*

# New / SKILSAW DISC SANDER

TWO POWERFUL MODELS FOR  
HEAVY DUTY AND CONSTANT  
PRODUCTION SERVICE



Here are the features  
**SKILSAW DISC SANDERS**

**STREAMLINE BODY** — Streamline design, perfect balance and lightweight make the sander easier to use. Comfortable handles give complete control under heavy sanding loads.

**STRAIGHT-LINE VENTILATION** — As a cool-running tool, bearings are located to blow air away from operator and prevent clogging. Efficient air-filter protects compressor and motor from abrasive dust and dirt.

**POWERFUL MOTOR** — Ample reserve power to insure long life. Provides for fast sanding and grinding.

**SEALED BEARINGS** — bearings, in all positions, fully sealed as a protection against dust and grease leakage.

**BEVEL GEARING** — Smooth and quiet in operation.

These two 2 in. SKILSAW Disc Sanders incorporate everything that is new in fine portable tool construction. Compact streamlined design, ground point, shock engineering refinements. Compare every feature and you will choose one of these tools for all sanding and grinding work done by mobile hand methods. See them at your distributor! Send Coupon No. 26 for catalog.

**SKILSAW, INC.**

3325 ELSTON AVE., CHICAGO  
210 East 4th Street, New York — 32 Franklin Ave., Boston  
1425 Spring Garden, Philadelphia

moves it, returns ram to the starting position, lifts out the broach and is ready for the next cycle. The machine is readily changed from one type of job to another by substituting suitable broach-guides and broaches. Adjustment of stroke-length is made easily upon opening door at side of column. Pressure in the hydraulic circuit may be observed at any time by opening the shut-off cock which protects the fan-type gauge. A spout at the lower left-hand side of the machine facilitates chip removal.

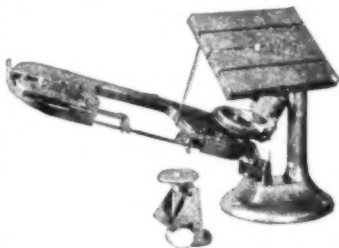
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*(Continued on Page 50)*



# New! SKILSAW DISC SANDER

TWO POWERFUL MODELS FOR  
HEAVY DUTY AND CONSTANT  
PRODUCTION SERVICE



# SKILSAW

These two 7 in. SKILSAW Disc Sanders incorporate everything that is new in fine portable tool construction. Compact streamlined design, greater power, more engineering refinement! Compare every feature and you will choose one of these tools for all sanding and grinding now done by costly hand methods. See them at your distributors! Send Coupon No. 16 for catalog.

**SKILSAW, INC.**

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Here are the features

## SKILSAW DISC SANDERS

### STREAMLINE BODY —

Smooth trim design, perfect balance and light weight make the sander easier to use. Comfortable handles give complete control under heavy sanding loads.

### STRAIGHT - LINE VENTILATION —

Assures a cool-running tool. Blowers are located to blow away from operator and prevent clogging. Efficient air-filter protects compressor and motor from abrasive dust and dirt.

### POWERFUL MOTOR —

Ample reserve power to insure long life. Provides for fast sanding and grinding.

### SEALED BEARINGS —

Ball bearings, in all positions, fully sealed as a protection against dust and grease leaks.

### BEVEL GEARING —

Smooth and quiet in operation.

The upright frame swings down to the floor where gates and risers may be cut off large castings that are too heavy to place on the table. The capacity at this point is 14x18 inches. Bar stock up to 6 inches may also be cut at this position.

This versatile saw was built for use in pattern shops, sheet metal works, cutting gates and risers in foundries, for cutting any shape of structural steel, bar stock, maintenance work, tubes, pipes, etc. They'll be glad to send a descriptive leaflet to all who are interested.

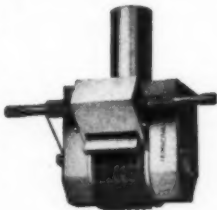
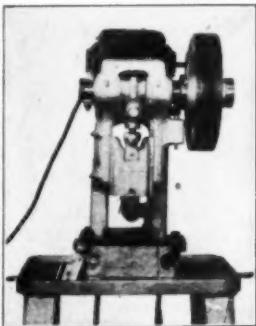
### Automatic Wire Numbering Machine

Numberall Stamp & Tool Co., Huguenot Park, Staten Island, N. Y., have developed a power press with automatic numbering head for use by wire mills and screw manufacturers in marking pieces of test wires.

The press is driven by a  $\frac{1}{4}$  h.p. motor and has an automatic numbering head which stamps consecutively,  $\frac{1}{16}$  inch figures in a vertical position on wires. For the most part, three or four wheels are used which stamp figures up to 999 or 9999 respectively. Bolster with V blocks are designed to take wires from  $\frac{1}{16}$  to  $\frac{1}{2}$  inch in diameter.

The numbering head can also be furnished to duplicate or triplicate the numbers stamped, and the marking operation can be done very rapidly with this press, which is shown in the accompanying illustration. A close-up view of the numbering head reveals some details of its construction.

The manufacturers will gladly supply full information on request.



# ARMSTRONG

TRADE MARK REG. IN U.S. PAT. OFFICE

## Lost Machine Hours Lost Profits



The smooth operation of a plant is dependent on the operation of its Tool Room. Without Tools quickly adaptable to every need, without tools that will "stand the gaff"—valuable Machine Hours are lost—carries right through the plant with retarded production and resultant departmental jam-up . . . means only one thing **Lost Profits** at each step.

With the ARMSTRONG System of Tool Holders there's a tool for every job—a tool that Saves All Forging 70% Grinding and 90% High Speed Steel and each tool *built* to "stand the gaff". Over 100 sizes and shapes for every operation on lathes, planers, slotters and shapers and for standard operations on Turret Lathes and Screw Machines.

End lost Machine Hours—Lost Profits by starting today to build your Armstrong System—no costly change-over or confusion—add each new ARMSTRONG TOOL HOLDER only as needed. ARMSTRONG TOOL HOLDERS are stocked by leading Mill Supply Houses. They are as available as your telephone. *Send Quickmail Coupon No. 6 for a complete catalog.*



### Armstrong Bros. Tool Co.

"The Tool Holder People"

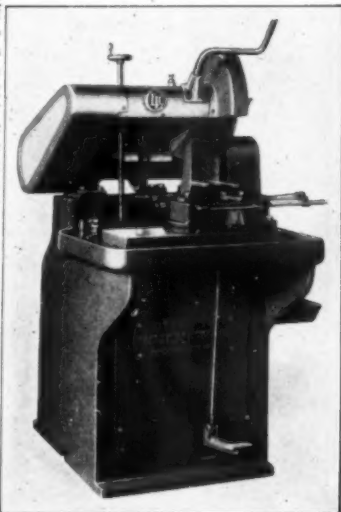
308 N. Francisco Ave., Chicago, U.S.A.

## Cincinnati Presents New Wet Abrasive Cut-Off Machine

The Cincinnati Electrical Tool Co., Cincinnati, Ohio, offer a new wet abrasive cut-off machine for straight or angle cutting of practically all materials encountered in general manufacturing, including steel alloys, non-ferrous metals such as brass, copper, aluminum and also fibrous and plastic materials in various sizes, angles and shapes.

The wet cutting feature is said to add materially to the life of abrasive cut-off wheels and also to produce cuts with a minimum of burr. Burning is overcome by directing the coolant on the point of contact in the cut and on the sides of the wheel as well.

The machine shown in accompanying illustration is intended for straight or angle cuts in solids up to 2¼ inches or tubing up to 3½ inches in diameter, the same vise being suitable for the various cuts. For angles up to 45 degrees the maximum capacity

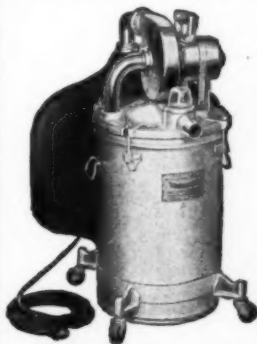


is 2¼ inches. Graduations on the table make angle cutting fast and accurate.

Material is held in the vise by spring tension on the jaws and work is released by foot lever after the cut is completed, so the operator's hands are free at all times. Work is held securely on both sides of the

*(Continued on Page 54)*

***For the First Time! Vacuum Cleaning  
Made Applicable to All Plant Cleaning  
Requirements at Low Cost With***



**Breuer's Ball Bearing**

**TORNADO**

**Portable Industrial  
Vacuum Cleaner**

This new machine is designed to solve all industrial cleaning problems without the expense of installing a stationary plant or using so-called portable cleaners which are too heavy and expensive for average plant applications.

**TREMENDOUS POWER**

**1 H. P. Motor—46 $\frac{1}{4}$  Waterlift**

Do not confuse the TORNADO with light-duty cleaning machines. Model 112 combines light weight (only 40 pounds) with tremendous cleaning power (1 H. P. G. E. ball bearing Motor—46 $\frac{1}{4}$ " waterlift). Patented principle of separating fine dust from refuse and depositing heavy dirt in tank makes this cleaner as applicable to heavy duty work as the largest machines. Sturdy construction insures long life and low yearly cost.

Has plenty of power and capacity to handle dust, dirt, sand, sawdust, metal scraps, filings, etc. Attachments available for cleaning boiler tubes, ovens, machinery, walls, floors, pipes, etc. Motor unit can be quickly removed for blowing dust from motors, etc. The handiest heavy duty, low cost, time and labor saving unit ever built.

*We prove TORNADO advantages right in your plant without obligation. Send Quickmail Coupon No. 30 for details of trial offer and further information or write.*

**BREUER ELECTRIC MFG. CO.**  
842 Blackhawk Street, Chicago, Illinois

cut, preventing cramping of the work and wheel breakage. The abrasive wheel is moved into the work by means of a hand lever, and the arm which carries the abrasive wheel pivots on the pedestal with a counterbalance for easy operation. The wheel is guarded except for the actual cutting section.

A stop is provided which may be set for any depth of cut within the capacity of the machine, and a longitudinal stop is provided for regulating the length of material to be cut.

Two sets of wheel flanges in different sizes are furnished to insure maximum use of the abrasive wheels, and a shaft locking device facilitates wheel changing.

The coolant system comprises a  $\frac{1}{4}$  h.p. direct motor driven centrifugal pump with 10 gallon tank, piping and convenient control valve.

The spindle is of nickel, mounted on sealed-type deep-grooved ball bearings running in oil. Labyrinth seals prevent the ingress of grit or dirt into the bearing housings, and a convenient drain plug provides for oil renewal.

The spindle is driven by multiple V-belts from a  $7\frac{1}{2}$  h.p. ball bearing drip-proof motor operating at 1800 r.p.m. Motor is mounted in the pedestal with magnetic starter, overload and no-voltage protection, and push button control. It can also be equipped with 10 or 15 h.p. motor if desired.

Full particulars may be obtained by addressing the manufacturers. Use Quickmail coupon No. 21 on your business letterhead when you write for details.

## **Rockford Announces Two New Hy-Draulic Shapers and a Double-Housing Hy-Draulic Planer**

The Rockford Machine Tool Co., Rockford, Ill., announce a trio of interesting new Hy-Draulic machines—a double-housing planer, a 36" openside shaper and a 12" high speed shaper. These new products are illustrated and fully described in attractive leaflets which the manufacturer will be glad to mail on request to any interested readers.

The planer is equipped with a standard constant speed motor for driving the hydraulic unit, which it is pointed out, supplants the usual reversing motor and

*(Continued on Page 56)*

**CAPACITY to BEND**

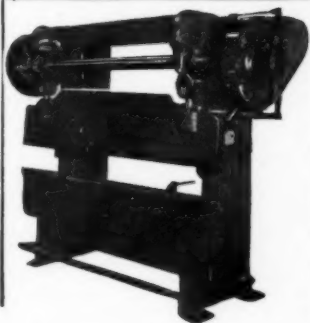
**96" of 10 GAUGE**

**the NEW  
BIGGER  
IMPROVED**

**Verson**

**ALLSTEEL JR.  
PRESS BRAKES  
LEAD THE  
FIELD**

==  
**Investigate  
These  
Cost  
Reducers  
Now!**  
==



*Complete information on request.*

**THE ALLSTEEL PRESS CO.**  
12017 So. Peoria St., CHICAGO, ILL.

its complications. Many detailed advantages of the hydraulic drive are enumerated, the basic ones being increased production, cutting of costs, improved quality of work, removing more metal per horsepower and providing a finer finish.

The new planer has many new construction features and refinements that should appeal to the man who uses a machine of this type.

The 36" Hy-Draulic openside shaper is said to overcome the deflection difficulties sometimes encountered with ram-type shapers, by reciprocating the work instead of the tool, providing a double-length bed and planer-type table which supports the work solidly at all points in its travel. The cutting tool head is carried on an easily adjusted heavy rail. This construction is offered as retaining the speed and convenience of the shaper with the accuracy and easy set-up of the planer, and the openside design extends the field of application.

The manufacturer offers the new 12" shaper with the conviction that it represents a decided advance in shaper design, construction and operation and that it offers the user greater proportionate benefits than he receives from the use of hydraulic power in other machine tools. Detailed comparisons of the advantages of hydraulic and mechanical drives are given, which in this instance are free from bias because this particular manufacturer produces both types.

The new 12" Hy-Draulic Shaper has many very attractive features, developed as a result of long experience in shaper production, and the new model evidently is a substantial contribution in the direction of increased production and reduced operating costs.

Executives interested in any of these machines may use Quickmail coupon No. 40 when writing for information.

### **New Booklet on Pullmore Clutches**

Rockford Drilling Machine Division of Borg-Warner Corporation, 113 Catherine St., Rockford, Ill., have issued a new booklet on Pullmore clutches illustrating a number of machines of varying types and applications, with exact locations of the clutch installations indicated, and detailed sections of clutch designs recommended for the different uses. Handy reference tables are also given of ratings and dimensions for the different types of Pullmore clutches. A copy of the booklet will be sent on request.





Built for  
**EXCEPTIONAL  
SERVICE**

**ROCKFORD**

**INCLINABLE  
AND  
STRAIGHT SIDE  
PRESSES**

in all  
sizes

**T**HE ever increasing use of heavy sheet metal stampings nowadays in place of castings and the numerous parts formerly made on screw machines, requires presses of greater power and capacity, and that's just what you get in the **ROCKFORD**.

Rockford Presses are sturdily built of the best materials and incorporate many features that are the result of years of experience in building presses of various types. You can depend upon a Rockford—for it is designed to maintain exact adjustment throughout long runs and under heavy duty.

*Write for Catalog*

**ROCKFORD IRON WORKS**  
ROCKFORD, ILLINOIS

## Strand Adds New Model

N. A. Strand & Co., 5001 N. Wolcott Ave., Chicago, have added to their broad line of flexible shaft machines a new tool and die maker's machine, Type MY-4, consisting of a  $\frac{1}{4}$  h. p. motor and three-speed ball bearing countershaft with belt guard. Two combinations of speeds are available — 1700, 3000 and 5200 r.p.m. — and a range of higher speeds including 3400, 6000 and 10,400 r.p.m.

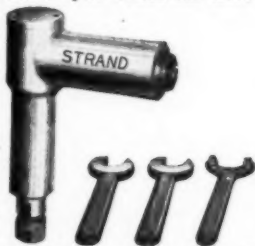
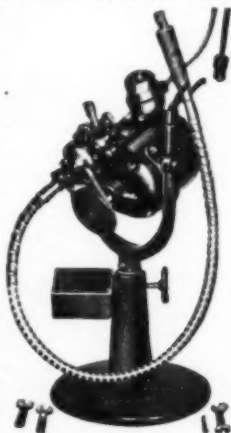
The machine is supplied with either combination.

The motor is mounted on a swivelling yoke, permitting the machine to swivel in all positions.

A 4-foot flexible shaft with a ball bearing hand piece fitted with a split collet is provided with each machine, and a neat tool box is attached to the bench stand. The machine may be raised or lowered to any height by means of an adjusting stud.

Strand has also developed a small bearing right angle attachment, interchangeable with this machine, as illustrated, arranged with a split collet for holding tools with round shanks. This is an extremely useful tool under certain working conditions and is considered an indispensable part of flexible shaft equipment.

Bulletins on these tools are now available and may be obtained by writing to the manufacturer, who will also furnish on request information on other types of flexible shaft machines to suit standard or special grinding and polishing problems.



# INCREASE PRODUCTION WITH FEDERAL PRESSES



## No. 33 BACK GEARED

**Capacity 26 tons**

**Large area ram face**

**Large bolster plate**

**Large opening thru  
back for bulky work**

Designed and built especially for large or bulky light work and for progressive dies such as used in lamination.

All models of FEDERAL heavy duty presses are equipped with Timken bearings to increase efficiency and production at the lowest possible upkeep cost. Roller bearings in the flywheel are adjustable for wear, eliminating the need for expensive rebuilding and repairs after long use and preventing damage to the clutch and control mechanism. Non-repeat safety type clutch and tripping device, also standard equipment on FEDERAL models, guard against accidents to operators or dies should momentum carry the crankshaft beyond center.

**FEDERAL  
PRESS CO.  
ELKHART, IND.**

**Send Coupon No. 68  
for illustrated in-  
formative circular**

## Chicago Wheel Co. Develops Soft Rubber Polishing Wheels

The Chicago Wheel & Mfg. Co., 1101 West Monroe St., Chicago, announce a relatively new development in polishing wheels which should find wide application in all types of industry and help to speed-up finishing methods.

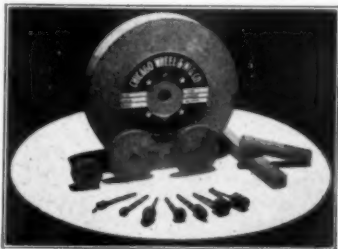
Although not offered as a cure-all for all polishing problems, the new wheels in regular production are said to have often supplanted set-up wheels and the final polishing rag or felt wheels, performing a complete operation with one single "CHICAGO" soft rubber polishing wheel.

The new "CHICAGO" wheels are soft and flexible, adapting themselves particularly to die work, reaching hard-to-get-at places, cavities, etc., around radii without danger of wheel breakage.

The face may be dressed to any contour. Wheels may be run wet or dry and have sufficient grinding action to remove finish grinding marks from any metal surface. The flexible bond is impregnated with five different types of polishing compound to impart a brilliant finish to any surface.

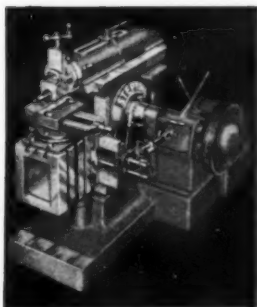
No special equipment of any kind is needed for "CHICAGO" soft rubber polishing wheels, excellent results, it is said, being obtained with relatively low speeds. Surface speeds of 4000 s.f.m. or lower are recommended. In many instances, especially with the larger wheels, surface speeds as low as 2500 s.f.m. have been found very satisfactory.

The new wheels are available in sizes up to and including 8" in diameter, in thicknesses not exceeding 2", and are especially useful with portable electric tools, flexible shafts, etc.



(Continued on Page 62)

# POWERFUL MACHINES for HEAVY WORK

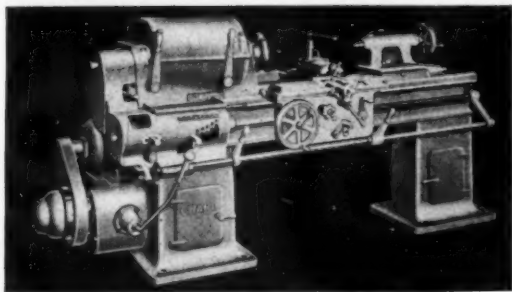


## STEPTOE SHAPERS

Force feed continuous lubrication, heavy construction and Timken bearings throughout insure rigidity, accuracy and long life. Centralized controls are within easy reach of the operator at all times.

Instantaneous feed and speed changes may be made with fingertip control while the machine is running.

*Send today for catalog No. 130.*



## CHARD Twelve-Speed All Geared Lathes

Precision Timken or plain bearing spindle—Instantaneous start or stop of spindle—12 speed changes in 15 seconds—Heat treated and hardened gears run in oil in speed box—All shafts mounted on ball bearings—Powerful, accurate, and easy control—Built in 16", 18" and 20" standard engine lathes, manufacturing lathes and tool room lathes. ● *Send today for full information.*

**Western Machine Tool Works**  
**HOLLAND,                      MICHIGAN**

The cutting action of the wheels can be altered in keeping with the requirements of the particular application. However, the polishing or burnishing effect is always present, and the very nature of the wheel and bond lends itself to polishing.

"CHICAGO" mounted wheels are also made with this soft rubber polishing bond and are available in conventional shapes mounted on steel shanks. In tests conducted in representative die shops, these new wheels are said to have cut finishing time on dies as much as one third.

The manufacturers will gladly send full information to any one who is interested.

### **More Power Hours in Small Motor Field**

A new "H" motor is announced by The Dumore Co., of Racine, Wis., pioneer builders of fractional horsepower universal motors.

Available in several different types: ventilated, totally enclosed, sleeve and ball bearing and with worm gear speed reduction units, it is said that this 1/50th h.p. universal motor embodies all the latest features of modern motor design.

Into this unit has been built many of the features which have contributed to the dependability of the larger Dumore units and the new model is asserted to be unusually compact, sturdy and efficient.

The standard totally enclosed motor known as the "H" is rated at 1/50th h.p. at 6500 r.p.m., for 30 minute duty. The standard open motor known as the "HV" is rated at 1/50th h.p. at 5000 r.p.m. continuous duty or 1/55th h.p., at 4000 r.p.m. for 30 minute duty.

Complete engineering details and blueprints are available on request from the manufacturers.



# WITTEK

AUTOMATIC

## Roll Feeds

For Every Size and Make of Punch Press

**FAST  
ACCURATE  
AUTOMATIC  
SAFE**



### Increases Punch Press Production

Keeps production at the same steady high level day in and day out—no fatigue or other human "let down". Easily installed on any press without alteration. Feeds automatically any stock from coils in lengths from 0" to 24" per press stroke. Saves time, operating costs and dies—reduces scrap to a minimum. A type for every requirement—Single Roll, Double Roll, and Compound with straightener.

### Wittek Reel Stands

Automatic, Self-Centering, Ball-Bearing. Adjustable to any height, balanced at any angle, 500 lb. capacity. Prompt deliveries from stock. Also made in four other models.

Write Today for Bulletin "HF" giving complete details and specifications of WITTEK Automatic Roll Feeds and Reel Stands.

USE QUICKMAIL COUPON No. 35



**WITTEK MANUFACTURING COMPANY**

4305-9 W. 24TH PLACE.

CHICAGO, ILL.

## A New Mall Grinding Unit

The Mall Tool Company, 7742 South Chicago Ave., Chicago, announce a new grinder known as the "3524-DP". It is equipped with a  $\frac{1}{2}$  h.p., 3450 r.p.m., ball bearing mounted constant speed motor. The  $\frac{7}{16}$ " diameter by 6 foot flexible shaft rotates within an internal bearing flexible housing, while the angle and straight spindles have large ball bearings for ease of operation and long life. The mounting has large, easy rolling casters, and a tray is provided for tools and miscellaneous attachments.



Like other Mall units, this grinder can be fitted with attachments for disc sanding, grinding, buffing, polishing, drilling and many other applications. The price is unusually low.

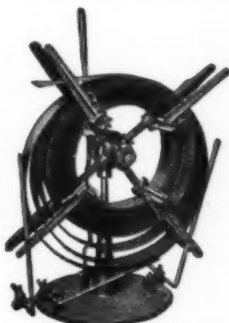
Information on this and other Mall units will be sent on request by the manufacturer.

### English Company Seeks Agencies

Monolines Limited, 329 High Holborn, London, W. C. 1, England, are looking for sole agencies in the United Kingdom and Ireland for metal-working machines and air conditioning equipment.



**FASTER And More ACCURATE  
BLANKING with  
LITTELL  
Automatic Centering Reels**



Littell automatic centering reels enable one man to load and center heavy coils in less than two minutes regardless of the difference in inside diameters between one coil and the next. Centered coils turning on ball bearings revolve with the greatest of ease. This condition means greater production for both hand feeding and automatic feeding of stock.

These reels are made in three sizes, in both plain and motor driven types.

**No. 3 for 300 pound coils.**

**No. 5 for 600 pound coils.**

**No. 10 for 1000 pound coils.**

*Write today for circulars showing types and sizes of LITTELL automatic centering reels.*

*Use Coupon No. 41 when you send for Littell circulars.*

**F. J. LITTELL MACHINE CO.**

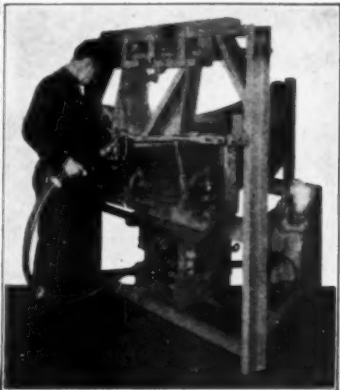
**4125 Ravenswood Ave.,**

**Chicago, Ill.**

**Manufacturers of Punch Press Feeds and Reels**

## Progressive Offers New Spot-Welding Fixture

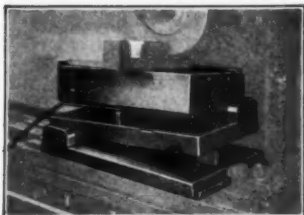
Because of its experience and knowledge of spot-welding problems, the Progressive Welder Co., 737 Piquette Ave., Detroit, should be in position to offer a real service to production and manufacturing plants. For that reason, the new fixture designed for the Progressive Hydraulic Welding Gun should arouse interest. The accompanying illustration will suggest that it is intended for uniting sheet metal parts in medium production systems.



The fixtures are said to be comparatively inexpensive because of the simple method of fabrication, and to more than pay for the extra investment over makeshift set-ups. The parts to be welded are clamped and positioned by quick acting devices so that the finished assembly will fit its corresponding parts. The copper bus bars are cast to fit the parts to be welded assuring uniformly identical assemblies. The transformer and hydraulic booster for the hydraulic welding gun are mounted in the fixture, making a compact unit—an advantage where floor space is limited.

The makers stress the compact and accessible arrangement of all clamping devices, the placing of the work for loading and unloading with minimum handling, and the ease of handling and positioning of the spot-welding gun. To put the machine into operation, air, water and electrical connections are all that are needed.

*(Continued on Page 68)*



## SHORT SHORT STORIES ABOUT The Magna-Sine

### "THEY TOOK IT AWAY FROM ME"



**S**HORTLY after the MAGNA-SINE was introduced, a demonstration was arranged at one of the automobile plants in Flint, Mich. The salesman returned without his sample.

"They wouldn't let me take it away", he said. "A job was going on the grinders this afternoon which was 'made to order' for the MAGNA-SINE. They put the requisition through while I was there. Now I need another demonstrator."

Did it measure up to expectations on that first job? Here's the answer. That company has since ordered four more.

You too will be enthusiastic about the MAGNA-SINE'S time and money-saving advantages . . . its precision accuracy. If you're not entirely familiar with its adaptation to *any* job requiring an angular set-up, write for full details. For convenience use **Quickmail Coupon No. 63.**

# The MAGNA-SINE

## ROBBINS ENGINEERING CO.

639 Mt. Elliott Avenue,

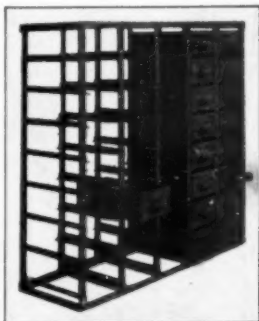
Detroit, Michigan

The maker will gladly supply any desired information and co-operate in providing special custom-built fixtures for any spot-welding problem. Quickmail coupon No. 38 will bring an illustrated Progressive bulletin.

## New Sterling Box and Bin Rack

A new rack, which can be furnished to fit any size box, and to go into any size space has been devised by the Sterling Factory Equipment Co., Inc., of Providence, R. I., manufacturers of handling and storage equipment.

The type of construction used makes these racks flexible enough to be adapted to almost any box storage needs. Length of the uprights determines the height of rack—length of box runners the width—and length of angle connectors at top and bottom determines the length of the rack. The welded construction assures rigidity.



The manufacturers say that the racks need not be fastened to wall, and that several may be bolted together to prevent sway. The racks are ready for use when received, and utilize full storage space. It is said that by eliminating the need for cross pieces under the boxes, the space of two 5 inch high boxes is saved in a 5 foot rack. Uprights are stocked in sizes from under bench height up to 5 feet. Runners are stocked to fit boxes 12, 15, 18, 24 and 30 inches long, but can be provided for other sizes. For heights over 5 feet racks are made to fit on top of one another.

The box shown in rack is 10½ inches wide, 6 inches deep and 21 inches long. Other sizes of boxes, bins or trays of steel are made to fit the racks. Full information may be obtained by addressing the makers.

Use Quickmail coupon No. 22 when you write.



**SAVE TIME! GET BETTER RESULTS!  
INCREASE YOUR PROFITS!**

with a

*Mall* TRADE MARK **UNIVERSAL GRINDER**

More horsepower per pound of weight in the operator's hands than any other grinder on the market.

It will pay you to investigate this **PORTABLE, EFFICIENT, HIGH SPEED** machine for grinding and casting snagging. Also, inquire about the various other **MALL** grinders. There is a type for every job!

*Use Quickmail Coupon No. 46*

**MALL TOOL COMPANY**

**7742 South Chicago Avenue  
Chicago, Illinois**

**Offices and Distributors in all Principal Cities**

## 1000-a-Minute Punch Press

To meet the demand of the blanking industry for higher speed, positive accuracy and lower die costs, the Super Speed Press Corporation has developed a punch press which has a speed of 1000 blanks a minute with one die. It is already in successful use in many large industrial plants.

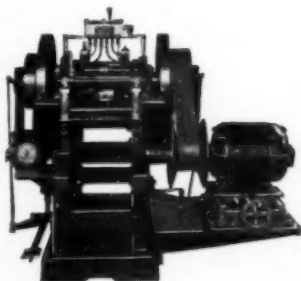
Embodied in this press is a continuous feeder which, according to the manufacturer, can be controlled while the machine is running, is absolutely accurate and never allows the stock to stop or creep. This is accomplished by the use of an oscillating die which moves at the same speed as the feeder.

Adjustment of the stroke is made simple and rapid through an adjustable crankshaft, heat treated and ground. There are no pawls, cams or ratchets in this press to complicate a set-up and adjustment of the feeder can be made in five seconds merely by turning a handwheel.

The machine can be built to discharge blanks at either top or bottom and will handle both roll and strip material. All parts under strain, according to the specifications, are made of manganese molybdenum steel.

At a speed of 1000 strokes a minute, the press can be stopped instantly, the manufacturer says, without jar or vibration. Features of importance are guides below the level of the punch, variable speed drive, ball bearing construction, minimum vibration, progressive dies without pilots and scientific lubrication of material and press.

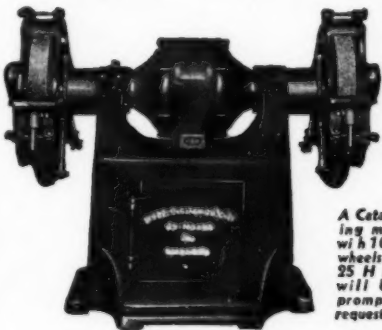
Simplicity, quietness and safety to an unusual degree are other features which should insure this press a welcome from the industry. For literature, write to the Super Speed Press Corporation, 55 Liberty St., New York City.



# MARSCHKE

*Formerly Van Dorn, Black & Decker*

## HEAVY DUTY GRINDERS AND BUFFERS



*A Catalog showing machines with 10" to 30" wheels and 1 to 25 H. P. motors will be sent promptly upon request.*

An important item accounting for the fact that we are now manufacturing the MARSCHKE HEAVY DUTY GRINDERS and BUFFERS, is our own experience with these machines.

We have been using several different types and sizes of Marschke Grinders and Buffers for so long that "the oldest man" of the organization does not remember when they were originally installed.

Nor does anyone remember when any of these machines has given a bit of trouble and since that is the kind of machines we like to use, it's also the kind we like to make and sell.

You, too, will appreciate the dependable durability of Marschke Grinders and Buffers—formerly made by Van Dorn, Black & Decker—now being manufactured by

**VONNEGUT MOULDER CORP.**  
**1805 Madison Avenue, Indianapolis, Ind.**

**Send Coupon No. 47 for catalog.**

## New Hydraulic Feed Surface Grinder

Gallmeyer & Livingston Co., Grand Rapids, Mich., have just placed on the market a new high speed cross traveling head type of hydraulic feed surface grinder. The model illustrated has 16"x48" working surface of table, but other widths and lengths are available.

The base is a heavy one-piece casting twice the length of the working surface of the table, so in normal operation the working surface never overhangs the base.

The upright column carrying the vertical sliding head is a rigid one-piece casting. It is keyed, bolted and doweled to the base so securely that the two castings are in effect integral. Column walls are  $1\frac{3}{4}$  inch thick and stiffened with reinforcing ribs.



Table speed has an infinite variation from practically nothing up to a maximum of 150 feet per minute when driven by a 60 cycle motor. A lever in the center of the front valve plate is provided for stopping and starting and speed control. It operates in approximately a 90 degree arc between the stopped position and full speed.

The cross traveling spindle slide has a movement equivalent to the working surface of either 16" or 18". Thus a 4" standard wheel over-runs the working surface 2" on front and back edges of the table.

The cross traveling movement normally operates at each reversal of the table, and the amount of move-

*(Continued on Page 74)*



**F**ORMERLY  
manufactured  
by Rock-  
ford Machine  
Tool Co., of  
Rockford, Ill.,  
thousands of  
these drills have  
been installed in  
plants the coun-  
try over, where  
they have been  
giving universal  
satisfaction.

Counterbal-  
anced, eight-  
speed spindle,  
made from high  
carbon special  
steel, has quick  
advance and re-  
turn; positive  
feeds are instan-  
tly available  
while machine  
is in operation;  
all controls with-  
in easy reach.

## DRILLING MACHINES

14'-20'-21'  
Stationary  
Head

24'-28'-32'  
36'  
Sliding  
Head

\* \* \*

Belt or  
Motor Drive



*Write for  
Complete Details*

## POWERFUL—SIMPLE— DURABLE—ACCURATE

We have been builders of Drilling Equipment for more than 20 years and, in addition to the above drills, manufacture the Cleeteman Automatically Oiled, Anti-Friction, High Speed Drilling, Boring and Tapping Machines; Gang Drills and Special Drilling Machinery.

**CLEEREMAN MACHINE TOOL CO.**  
**GREEN BAY, WISCONSIN**

*(Formerly Green Bay Barker Machine Tool Works)*

ment may be set at anything from less than  $\frac{1}{32}$ " up to 2" at each reciprocation of the table. The total amount of cross travel in a given direction can be governed by adjustably positioned dogs. When the desired amount of cross feeding has taken place in one direction, it will automatically reverse and cross travel in the opposite direction. A convenient lever is provided for reversing the cross travel by hand, if it is desired to reverse before the reversing dogs contact the reverse mechanism. A small hand wheel in the valve plate provides for adjustment of cross travel. Cross feeding can be instantly disconnected by pulling a small hand lever and the head cross-traveled by hand. Provision is made for easy truing and dressing of the wheel.

The standard spindle drive employs an 1150 r.p.m. 25 h.p. motor which directly drives the spindle through a splined end. Thus the cross traveling mechanism is relieved of the burden of this 25 h.p. motor which is mounted in a fixed position on the vertically traveling head member.

The 16 and 18 inch machines are regularly equipped with 20 inch diameter wheels having 4 inch face, but other sizes may be had on special order. Capacity under the 20 inch wheel is 17 inches. Additional vertical capacity can be provided on special order.

Power elevation of the vertically moving head slide is provided as standard equipment, operated by a  $\frac{1}{2}$  h.p. motor, controlled by a double throw switch. When the handle is up, the head travels up and vice versa, remaining operative only so long as pressure is applied.

A large hand wheel in front controls vertical movement of the wheel head. This is graduated in .0001". Equivalent metric graduations may be had optionally at no extra cost.

Wet grinding equipment is standard. The tank is a separate unit on a portable roller base, to facilitate removal and cleaning. Coolant is pumped by an independent motor on top of the coolant tank, with conveniently separable electric and hose connections.

A request to the manufacturers will bring full information pertaining to this machine.



Actual  
Size

**FEDERAL**  
Announces  
their  
**MODEL TWO**  
1/10,000"

UNIVERSAL  
TEST INDICATOR

Send for Circular

**FEDERAL PRODUCTS CORP.**

1144 EDDY STREET, PROVIDENCE, R. I.

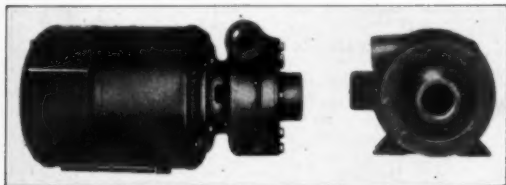
Detroit · Chicago · Muncie · Cleveland · New York

**Send Coupon No. 54 for Catalog**

## Pioneer Horizontal Coolant Pump

Machine tool builders and users should be interested in this new pump for coolants and lubricants, offered by the Pioneer Engineering & Mfg. Co., 31 Melbourne St., Detroit.

It is of the open impeller type direct connected to a full ball bearing, long hour, moisture-proof motor, and is said to have been designed and built for higher efficiencies and higher heads than conventional types. It is recommended for installations where maximum heads are essential, as in multiple or deep hole drilling, for filtered coolant supplies or in central reservoir systems serving a battery of machines, and is said to offer greater volumetric control and maximum flexibility in application and service.



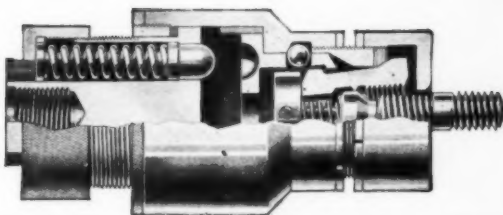
Although normally installed in a horizontal position, this pump is not limited to such applications. Due to the special bearing design, it may be set vertically if desired and the performance will be the same in either case.

A special mechanical seal is used at the shaft opening instead of a conventional packing gland. This permits shortening the distance between the pump bearing and the impeller by from 4 to 10 inches—making the installation more compact with the asserted advantage of eliminating shaft whip.

With this type of pump, increasing the effective head is said to reduce the power demand. When the head is increased to infinity, as it is when the discharge line valve is closed, power demand drops to a point just sufficient to overcome the hydraulic friction of the impeller.

Conversely, it is explained that reduction in the effective head increases power demand in the same

*(Continued on Page 78)*



## TITAN STUD SETTER

**Sets Studs to a Uniform Degree of Tightness without Strained or Mutilated Threads**

The Titan Stud Setter is a new controlled drive type for driving stud bolts, being full automatic in loading and releasing. It is a power-driven unit adaptable to all types of drill presses, air or electric tools, both portable and stationary. Operates at high or low speeds. Positive in driving and automatic in releasing. Studs may be set to any predetermined degree of tightness.



The possibilities of increased production with this tool, due to its capacity, speed range and service, plus the added economy that its safety features assure by automatic operation—all contribute toward making it a tool worthy of investigation and profitable to use.

*Send Quickmail Coupon  
No. 33 for Illustrated Circular*

**TITAN  
TOOL  
COMPANY**



**FAIRVIEW,  
PENNA.,  
U. S. A.**

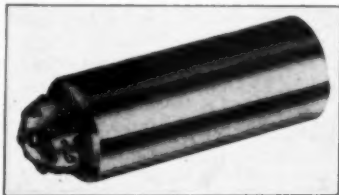
ratio. Thus, a motor operating at capacity in an installation having a very high head will not be suitable if the head is materially reduced because of the serious overloads developed. To avoid any possible operating difficulty of this character the Pioneer Pump is powered for the lowest possible head. Consequently, regardless of how the effective head may be varied, Pioneer Pumps will not suffer overloading from that cause.

Another advantage is that this unit operates at normal motor speeds and no speed reductions are necessary unless highly viscous liquids are encountered.

The makers will be glad to supply full details on request. Use coupon No. 28 when you write to them.

### **Carboloy Wheel Dresser Prices Reduced**

Carboloy Co., Inc., manufacturers of Carboloy cemented carbide tools, dies and wheel dressers announce a reduction in the price of Carboloy diamond-impregnated wheel dressers. Due to improved manufacturing methods the number of standard dressers has been reduced from 9 to 3. These 3 dressers, an example of which is illustrated, are designed for the rough, semi-finish and finish dressing of practically every type of commercial grinding wheel used in the industrial field.



This price reduction and the wider useful range of each dresser is intended to encourage users to apply Carboloy dressers more freely throughout their plants, and economically equip each machine with an individual dresser. It is pointed out that the use of these new dressers eliminates remounting expense, assures more complete diamond consumption, lowers dressing cost and provides more uniform results throughout the entire life of the dresser.

A new revised catalog DR-37 may be obtained, without obligation from Carboloy Co., Inc., 2985 East Jefferson Ave., Detroit, Mich. Send coupon No. 27 for it.

# **A RANGE OF A MILLION VARIATIONS OF SPEED**

**BETWEEN THE HIGH AND LOW LIMIT**

*Instantly Available With The*

## **NEW LENNEY VARIABLE SPEED TRANSMISSION**



### ***The Answer to Your Transmission Problem?***

This handy unit is worth investigating for it HAS satisfactorily solved the transmission problem in many plants. It gives a smooth, quiet, vibrationless flow of power, adjustable to a fraction of a revolution per minute with reduction from 2 2/5 to 1 to 8 to 1. Speed is constant even under severe overload. The Lenney Automatic Loading Device prevents slippage. Neat in appearance, with quality construction—built for long life without attention. Can be set to any speed while running or idle.

**Built in Motorized and Unit Types from 1/8 to 5 H. P.**

*Write Today for Complete Information and Prices*

**The LENNEY MACHINE & MFG. CO.  
WARREN, - - - - - OHIO**

● Territories Available to Agents of Proved Ability ●

## Personnel Changes at Carboloy

Carboloy Co., Inc., Detroit, manufacturers of Carboloy cemented carbide tools, dies and wheel dressers announce the following changes and additions to the personnel of their organization.

Mr. F. C. Ritner has been appointed Assistant to the President, in charge of special wear resistant applications, new developments and special products.

Mr. T. D. Lafferty, formerly of the Detroit District Office of the General Electric Co., has been appointed to the General Sales Offices as Assistant to Mr. Beardslee, General Sales Manager.

Mr. H. C. Stone, formerly of the Newark Office will represent the Company in Brooklyn and New York City territory.

## Geneva Precision Dial Indicator

Simplicity of design and ruggedness of construction seem to be the two outstanding features of the new Geneva Precision Dial Indicator presented by the Chicago Dial Indicator Co., 180 N. Wacker Drive, Chicago, which they designate as "The Instrument with the Improved Movement".

The accompanying illustration shows the instrument itself while the cutaways reveal details of the movement.

The manufacturers assert that friction and error are reduced by the employment of the lever arm instead of a gear train.

In substantiation they point out the value of the lever for multiplication as

(Continued on Page 82)





# **BANISH** these Imps of Motor Destruction



**1/4 H. P.  
to  
15 H. P.**

**Use Quickmail  
Coupon No. 23  
for catalog of  
complete line  
Hammond  
Grinders**

**HAMMOND** ELECTRIC GRINDERS  
of KALAMAZOO With Totally Enclosed Motors

*Hammond Machinery Builders*  
INCORPORATED  
KALAMAZOO, MICHIGAN, U.S.A.

**Eastern Branch: 148 W. 23rd St., New York**

it has but one pivot point between the driver and driven.

They emphasize that the leverage gives readings through the use of only a few teeth as contrasted with the compounding of gears, and that the lever arm performs the work of a gear  $1\frac{1}{8}$  inches in diameter.

Further they point out several decided advantages as a result of the reduced number of parts: lower production cost; reduced friction and greater accuracy; less wear and chance for trouble and repairs.

The special features include a rotating adjustable dial with positive locknut. The top knurled nut operates internal lock for the dial, permitting fine settings.

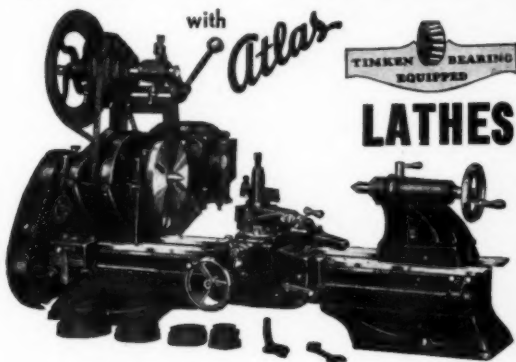
Case and plunger housing are machined from a one-piece nickel-silver casting. The movement is mounted between separate top and bottom plates and the hair spring is mounted between two flat plates to prevent interference with lever rack.

Stainless steel and bronze alloy parts are used throughout to make the instrument rustproof.

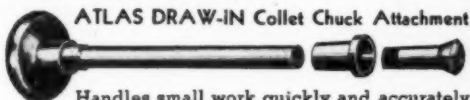
The chromium plated, black crystal finish makes a decidedly attractive appearance. The lithographed metal dial makes for clear, easy reading with black letters against a silver background.



# SPEED UP PRODUCTION



All those small part production jobs can now be handled easier and quicker on inexpensive Atlas Lathes equipped with Timken Bearings at \$111.50 to \$138.50. Other models \$45.50 and up.



Handles small work quickly and accurately—capacity  $\frac{1}{32}$ " to  $\frac{1}{2}$ ".

SEND COUPON No. 34 TODAY FOR THIS NEW CATALOG—



52 pages showing the latest in metal and wood lathes, drill presses, grinders, motors, tools, and attachments.

## ATLAS PRESS CO.

750 N. Pitcher St.,

Kalamazoo, Mich.

Factory Displays at:

**CHICAGO**  
35 E. Wacker at Wabash

**NEW YORK**  
130 W. 42nd St.

**PHILADELPHIA**  
113 N. Third St.

## New Wyco No. 30 Flexible Shaft Grinder

Wyzenbeek and Staff, 642 W. Washington Blvd., Chicago, announce a new all-purpose flexible shaft grinder designated as No. 30. It is constructed in three styles:—30A High Stand, 30B Low Stand and 30S Suspension type. Height to center of motor shaft is 28 inches and weight knocked down and in cartons for shipping is 132 pounds. Grinders are attractive in appearance in their high finish enamel with cadmium plated bright parts.



Motor equipment is  $\frac{3}{4}$  h.p., 3450 r.p.m., and may be set up for use with A. C. or D. C., and with odd frequencies or voltage—single phase with toggle switch and plug.

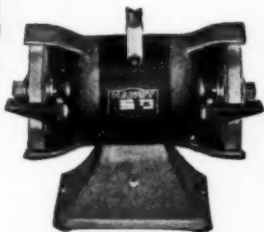
The stand has wide legs as will be noted from the illustration, easy rolling casters and a motor carried on a swivel base.

In planning for use in automotive shops the designers suggest the No. 616 WYCO angle head and 9" disc. For industrial shop service a 6" grinding wheel, arbor and aluminum wheel guard are suggested.

The manufacturers will be glad to supply full information on application.

**A Complete Line**  
*of Heavy - Duty* **GRINDERS**  
**6" to 12" Bench and Pedestal Types**

**each**  
**guaranteed**  
**for 1 year**



**At Left, Our Largest\_ \$208**  
**Above, Our Smallest\_ \$19.50**

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**BALDOR ELECTRIC CO.**

*(Electrical Manufacturers for 17 years)*

**4368 Duncan Ave.,**

**St. Louis, Mo.**

**BALDOR**

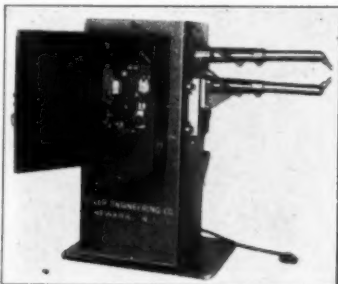
**BALL  
BEARING**

**GRINDERS**

## New Eisler Welder is Air Operated

Welds on the new air-operated spot welder manufactured by the Eisler Engineering Co., Newark, New Jersey, are controlled by means of a solenoid starter. By depressing the starter, the solenoid actuates the air cylinder which in turn closes the electrodes upon the work. The duration of the welding period is regulated by the automatic timer and contactor, assembled on the side of the fabricated frame. The timer is adjustable to regulate current from 2 to 60 cycles in 110 divisions. An air pressure valve on the machine is used to regulate the proper air pressure; this welder operates on an air pressure of 35 to 60 lbs., depending on the nature of the work.

Variation in type of work is facilitated by the interchangeable arms available on this welder. Arms shaped for welding different types of work can be substituted for the arms illustrated; the lower arm can also be raised or lowered to conform to the depth of work required. This welder is



especially equipped with strong arm supports. These supports make possible the long arms, and, at the same time, permit the arms to slide in or out of the supports to suit the type of work being welded. A water cooling arrangement passes water through the arms, electrode holders, and electrodes—water is circulated very close to the end of the electrodes. The arms on this welder are 36" long; arms can be supplied from 36" to 48" in length.

This welder is capable of making up to 100 spots per minute and is equipped with an 8-point hand wheel for heat regulation and with an air-cooled transformer.

If you are interested in purchasing a machine of this type, tear out Quickmail coupon No. 62 and send it to the Eisler Engineering Company.

**MORE POWER TO YOU**  
**WITH THE NEW**

**WYCO**

**No.  
30**

**FLEXIBLE SHAFT GRINDER**



**Made in Three Styles**  
No. 30 A, - High Stand.  
No. 30 B, - Low Stand.  
No. 30 S, - Suspension Type.

**COMPARE QUALITY!  
COMPARE PRICE!**

Complete with 9"  
Angle Head for  
Auto Body Shops,  
**\$91.50**

For D. C., or add  
cycles or voltage,  
—add,  
**\$10.00**

**THE NEW "WYCO  
Roll - Easy" 3  
Wheel Truck  
mounting can be  
furnished at,—**

**\$10.00**  
extra

Complete with  
Grinding Equipment,  
for Industrial Shop  
use.

**\$82.50**

**FLEXIBLE SHAFT:** 7 ft. long, size No. 30  
with "WYCO Non-Metallic Inner Liner". Finest  
quality  $\frac{1}{2}$  inch diameter inner core.

**MOTOR:**  $\frac{3}{4}$  H. P. 3450 R.P.M. Repulsion  
Induction Type, 60 cycle, 110-220 volt, Single  
Phase, with toggle switch, cord and plug.

Send Coupon No. 19 for  
the WYCO catalog.

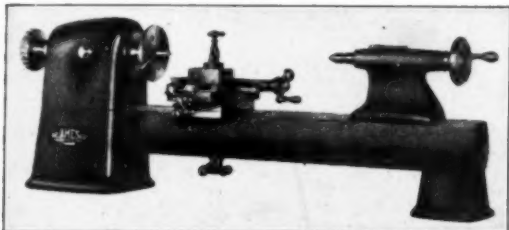
**WYZENBEEK & STAFF, INC.**

642 WASHINGTON BLVD.,

CHICAGO, ILL.

## **Ames Announces New Enclosed Head Precision Bench Lathe**

Increased power for heavier cuts, higher spindle speeds through direct motor drive and fully enclosed driving belts are attractive features of the new EH3 precision bench lathe announced by the B. C. Ames Co., of Waltham, Mass.



The EH3 permits machining small parts with extreme accuracy; doing second operation work on parts taken from automatic machines to bring them to final size; development and maintenance of tools and fixtures; model and experimental work, and the manufacture of small parts with fast operating attachments.

As will be noted from the illustration, the new Ames Lathe presents a clean-cut, attractive appearance. A leaflet giving a complete description of the EH3 will be sent on request.

## **Ajax Presents New Flexible Coupling**

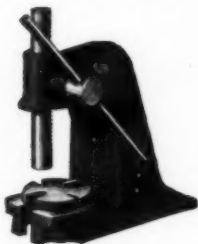
Ajax Flexible Coupling Co., Westfield, N. Y., announces a new model S-2 flexible coupling with a maximum bore of 2-inches. This new S-2 coupling is a useful addition to their complete list of couplings for direct connected machines and is rated at 12½ h. p. at 100 r.p.m. The torque rating is 660 ft. lbs. and maximum r.p.m. 7500. Overall diameter is 6½ inches. Model S-2 couplings are of the same rubber-cushioned design as other type "S" units which are stocked with bores from 1¼ inch up. A specification sheet will be sent on request.



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# **SHELDON**

## **ARBOR PRESSES and VISES**



**Arbor Presses**  
12 Sizes  
From  $\frac{3}{4}$  to 10 ton  
Pressure



**Plain and Swivel  
Milling Machine Vises**  
4 Sizes  
 $3\frac{1}{2}$  to  $8\frac{1}{2}$  inch Jaws



**Shaper Vises**  
2 Sizes  
12 and 14 inch Jaws



**Drill Press Vises**  
3 Sizes  
 $4\frac{1}{2}$ - $6\frac{1}{2}$  and 9 inch Jaws

*Use Quickmail Coupon  
No. 15 for Catalog and  
Price List*

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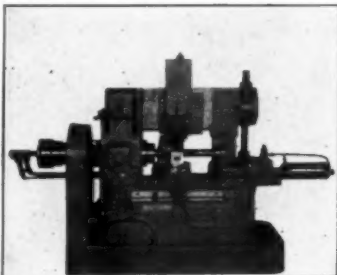
**SHELDON MACHINE CO.**  
3257 Cottage Grove Ave., Chicago, Ill.

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### Third Slide For Lo-Swing Imp Lathe

Seneca Falls Machine Co., Seneca Falls, N. Y., announce that a third slide or overarm is now available as a standard attachment for any of the new style Lo-Swing Imp Lathes.

The operation of this third slide is synchronized with the other turning and facing slides and is entirely automatic. It may be used for taking a finishing cut after roughing with tools on the rear slide or for chamfering and



similar operations. The slide is heavy enough so that it may be used for a roughing operation, if desired.

Operation is by means of a cam on the main camshaft. Means are provided for quickly setting this cam so that the third slide may be timed to suit the particular job. Full details may be obtained from the manufacturer.

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The Cincinnati Milling Machine and Cincinnati Grinders Inc., Cincinnati, Ohio, announce they have ready for distribution Bulletin M-748, illustrating and describing the Cincinnati High-Speed Universal Milling Attachment.

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Pratt & Whitney Division, Niles-Bement-Pond Company, Hartford, Conn., announce they have ready for distribution Circular No. 428 illustrating and describing the Pratt & Whitney John-Sons Roll Thread Snap Gages, Tri-Roll Gages and a new combination of Taper Plain and Thread Plug and Ring Gages.

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Hardinge Brothers, Inc., Elmira, N. Y., have issued a new catalog giving complete details of the "Cataract" line of precision bench lathes, milling machines, hand screw machines, screw cutting lathes, and collets for all machines.

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**DRILL JIG**

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**BUSHINGS**

## Standardized

Prompt delivery from stock on over 10,900 standard items — over 6700 ACME Standard — over 4200 A. S. A. Standard — all completely finished ready for use. *Special sizes made to order.*

Made in our new plant by the most exacting and scientific methods — insuring accurate fit plus long wear — concentric within .0003" full indicator reading.

Types shown at left, top to bottom, are: plain stationary press fit, type 'P'; shouldered stationary press fit, type 'S'; removable slip, type 'R'.

Send *Quickmail Coupon No. 39* for bulletin containing complete data and low prices. Satisfactory service guaranteed.

**ACME**  
**INDUSTRIAL CO.**  
210 N. LAFLIN ST.,  
CHICAGO, ILL.

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# NICHOLSON

## EXPANDING MANDRELS



They act as internal chucks for holding work while being machined on lathes, millers, grinders or shapers. Made in 14 different sizes taking bores of every fractional part of an inch from  $\frac{1}{2}$ " to 7". Sold singly or in sets. Write for Bulletin 530.

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## CONTROL VALVES

### 2, 3 and 4 Way Types



For operating air, water, steam or oil, single and double acting cylinders. Made in lever, foot, solenoid and motor operated styles for pressures up to 300 lbs. Hydraulic Valves up to 4000 lbs.



*Send Quickmail Coupon No 45 for Bulletin.*

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Other Products—Arbor Presses, Flexible Couplings, Steam Traps, Steam Separators, Steel and Stainless Steel Floats, etc.

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**W. H. Nicholson & Company**  
117 Oregon Street, Wilkes-Barre, Pa.

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# KRW Hydraulic and Sensitive ARBOR PRESSES

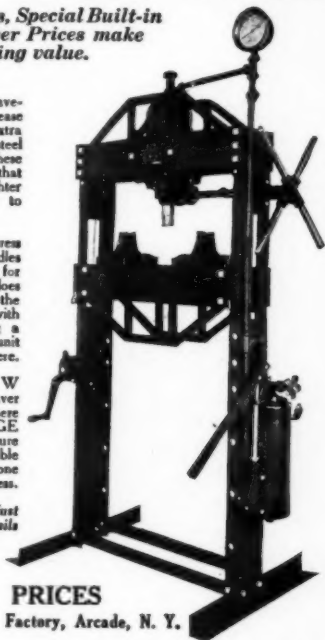
*New Improvements, Special Built-in Features and Lower Prices make them an outstanding value.*

**T**HE last word in convenience, efficiency and ease of operation. Built extra strong and well braced, with steel trusses electrically welded, these presses will withstand strains that would cause presses of lighter and inferior construction to buckle or collapse.

Hand wheel for sensitive press operations has sliding handles which pull out to the ends for increased leverage. Work does not have to be changed from the work table as is the case with other make presses having a separate sensitive press unit mounted on the side or elsewhere.

The importance of this K R W feature as a time and labor saver can be appreciated. Also there is **NO EXTRA CHARGE** for this important built-in feature on a KRW Press. Work table can be raised easily with one hand. A strictly one-man Press.

*Write for special circular, just off the press, giving full details and specifications of all KRW Arbor Presses.*



## PRICES

F. O. B. Factory, Arcade, N. Y.

No. 37—35 ton Hydraulic and Sensitive Arbor Press .....	\$150.00
No. 37E—50 ton Hydraulic and Sensitive Arbor Press.....	180.00
No. 37F—70 ton Hydraulic and Sensitive Arbor Press.....	300.00
Gauge and fittings, \$15.00 extra on all presses.	

## K. R. WILSON

10-16 Lock Street, Buffalo, N. Y., U. S. A.

EXPORT DEPARTMENT  
90 West St., New York, N. Y.

WEST COAST BRANCH  
722 Mateo St., Los Angeles

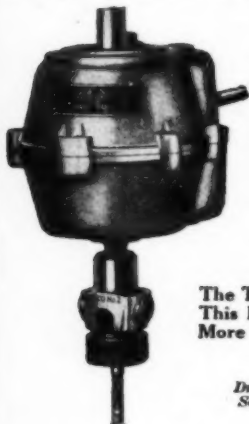
**THE ONLY TAPPER WITH A LEATHER CLUTCH**

**Ettco - Emrick**

## **TAPPING ATTACHMENTS**

ETTCO pioneered sensitive tapping 15 years ago with a leather lined friction driving clutch.

As yet we have found no substitute to equal the smooth, consistent super-sensitive action of leather for the exacting requirements of tapping.



The 1937 clutches have about double the "pull" and wear. Taking the Tapper apart and changing clutches is now a matter of a few minutes.

The Tappers have ball bearing spindles — needle bearing intermediate gears and all helical gears to insure the greatest possible speed.

**The Tap Idles "In"—Not Reverse—  
This Means Better Holes and Far  
More Tap Life.**

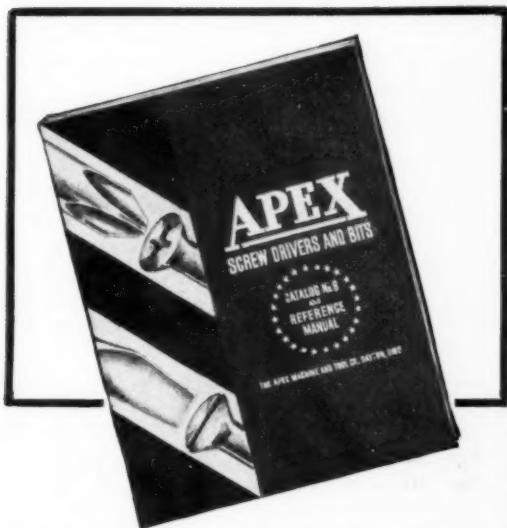
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*Drop us a line for our catalogue.  
Send Quickmail Coupon No. 49*

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These tappers are used with the ETTCO multiple tapping system and our No. 71 gravity foot operated tapping machine.

**ETTCO TOOL CO.**  
**594 JOHNSON AVE.                      BROOKLYN, N. Y.**



## THIS CATALOG

is of real importance to any user of Phillips Recessed Head or Slotted Head Screws.

Complete information on all kinds of Power and Spiral Screw driver bits to fit all makes of Electric, Air and Spiral screw drivers.

*Write for your copy on your Company letterhead.*

**USE QUICK  
MAIL  
COUPON  
No. 61**

**The APEX**  
—MACHINE & TOOL CO. Dayton, Ohio—

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- 2** Stick Coupon on front of postal card, giving your name, position and firm name on back of card.

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*Advertisers will not acknowledge inquiries unless you tell them what firm you are with, and your position with the firm.*

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**A SIMPLE - SPEEDY - SERVICE  
FOR YOUR CONVENIENCE**

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# ERRINGTON HYSPO

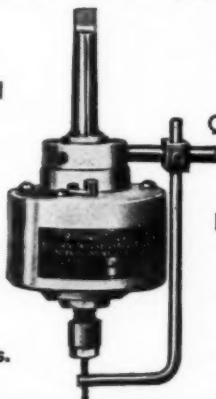
*Super-Sensitive Ball Bearing*

## Cone Drive

*2 to 1 Auto-Reverse Tapping Chuck*

Combination  
Bronze & Ball  
Bearings  
Thru-Out

Easy and  
Economical  
Replacement  
of  
Cone-Clutches.



Depth gauge  
facilitates  
Quick-Handling  
Especially  
on  
Bottom-Holes

Other Styles  
and Sizes  
0" to 2" taps

Size	Taps in Steel	Taps in Cast Iron	Price	Code
No. 00	0" to 3/16"	to 1/4"	\$35.00	Phlam
No. 0	to 3/8"	to 1/2"	\$50.00	Phalanx

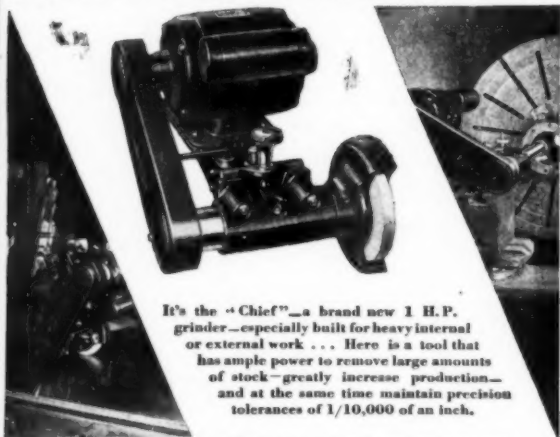
The principle on which this Style is designed is especially effective on very small tapping; whereas in the No. 0 size the Frictional Grip is Greatly **INTENSIFIED**, to cover a wider range, without loss of sensitiveness.

## Errington Mechanical Laboratory

Main Office and Works: STATEN ISLAND, New York

Chicago Office: New York Office: Boston Office:  
6047 N. Talman Ave. 220 Broadway 930 Old South Bldg.

# PRESENTING..THE MOST *Powerful* DUMORE LATHE GRINDER EVER BUILT



It's the "Chief"—a brand new 1 H.P. grinder—especially built for heavy internal or external work . . . Here is a tool that has ample power to remove large amounts of stock—greatly increase production—and at the same time maintain precision tolerances of 1/10,000 of an inch.

## PRECISION-BUILT THROUGHOUT

The "Chief" has a dynamically-balanced constant-speed motor—A. C. or D. C. . . . . totally enclosed . . . selected split-tolerance ball bearings in both motor and quill . . . . Six Dumore quills with patented ★ automatic lubricating system . . . . one for external work and 5 for internal, grinding to depths of 6, 12, 16, 20 and 24 inches. Quill speeds vary from 3,450 to 8,200 r. p. m., giving correct speeds to wheels from 8 inches to 3 inches in diameter . . . A Dumore distributor near you will gladly give demonstrations—without obligations.

*Use Quickmail Coupon No. 10 for Further Information*

**THE DUMORE CO., Dept. 247-G, RACINE, WIS.**

★ U. S. Patent No. 1,859,068

Per your ad in July  
Hitchcock's Blue Book  
send date and name  
Lathé Unit.

**HARDINGE  
BROTHERS, INC.**  
ELMIRA, N. Y.

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Hitchcock's Blue Book  
send building Press  
Brakes.

**DREIS & KRUMP  
MFG. CO.**  
7440 Loomis Blvd.  
CHICAGO, ILL.

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send me details on  
Hardinge Chisels.

**HARDINGE  
BROTHERS, INC.**  
ELMIRA, N. Y.

Per your ad in July  
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send building on the  
Buffalo Ironworkers.

**BUFFALO  
FORGE CO.**  
161 Mortimer St.  
BUFFALO, N. Y.

Per your ad in July  
Hitchcock's Blue Book  
send date and name  
Callers and Feed Pipers.

**MORRISON  
MACHINE  
PRODUCTS, INC.**  
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Per your ad in July  
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send catalog on Com-  
parators.

**JONES & LAMSON  
MACHINE CO.**  
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Cullman Sockets.

**CULLMAN WHEEL  
CO.**  
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Hitchcock's Blue Book  
send date and name  
Dumore Grinders.

**THE DUMORE CO.**  
RACINE, WIS.

Per your ad in July  
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send me catalog on  
No. 6A & 7A hacksaws.

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BLUM MFG. CO.**  
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Ave.  
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send catalog on De  
Luxe Grinders.

**CHICAGO WHEEL  
& MFG. CO.**  
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CHICAGO, ILL.

Per your ad in July  
Hitchcock's Blue Book  
send catalog on Arm-  
strong Bro. Tools.

**ARMSTRONG  
BROS. TOOL CO.**  
308 N. Francisco Av.  
CHICAGO, ILL.

Per your ad in July  
Hitchcock's Blue Book  
send Hand Grinder  
on 10-day trial.

**CHICAGO WHEEL  
& MFG. CO.**  
1101 W. Monroe St.  
CHICAGO, ILL.

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Stick coupon on a postcard or letterhead and sign name, title and firm. It will bring a bulletin on Chicago Press Brakes.

**DREIS & KRUMP MFG. CO.**

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Stick coupon on letterhead or postcard and sign name, title and firm for bulletin on Bench Lathe Unit.

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8

Stick coupon on letterhead or postcard and sign name, title and firm for bulletin on the Buffalo Ironworkers.

**BUFFALO FORGE CO.**

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Stick coupon on letterhead or postcard and sign name, title and firm for bulletin on Hardinge Collets.

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9

Stick coupon on letterhead only and sign your name, title and firm for catalog on Comparators.

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3

Stick coupon on letterhead or postcard and sign name, title and firm for bulletin on Collets and Feed Fingers.

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PRODUCTS**

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Stick coupon on letterhead or postcard and sign name, title and firm for information on Dumore Grinders.

**THE DUMORE CO.**

4

Stick coupon on letterhead or postcard and sign name, title and firm for catalog on Cullman Sprockets.

**CULLMAN WHEEL CO.**

11

Stick coupon on letterhead or postcard and sign name, title and firm for catalog on DeLuxe Handee Grinders.

**CHICAGO WHEEL  
& MFG. CO.**

5

Stick coupon on letterhead or postcard and sign name, title and firm for catalog on Marvel Hackaws.

**ARMSTRONG-BLUM  
MFG. CO.**

12

Stick coupon on letterhead or postcard and sign name, title and firm for Handee Grinder on 10 day trial.

**CHICAGO WHEEL  
& MFG. CO.**

6

Stick coupon on letterhead or postcard and sign name, title and firm for catalog on Armstrong Bros. Tools.

**ARMSTRONG BROS.  
TOOL CO.**

Per your ad in July  
Hitchcock's Blue Book  
send data on ball  
bearing sliders.

**PROÇUNIER  
SAFETY CHUCK  
CO.**  
14. S. Clinton St.  
CHICAGO, ILL.

Per your ad in July  
Hitchcock's Blue Book  
send data on the  
Wye line.

**WYZENBEEK  
& STAFF**  
642 Washington Bl.  
CHICAGO, ILL.

Per your ad in July  
Hitchcock's Blue Book  
send data on The  
Glitcher.

**TOMKINS-  
JOHNSON CO.**  
JACKSON, MICH.

Per your ad in July  
Hitchcock's Blue Book  
send data on  
Mapak Valve.

**GALLAND-  
HENNING  
MFG. CO.**  
2753 S. 31st St.  
MILWAUKEE, WIS.

Per your ad in July  
Hitchcock's Blue Book  
send data on Shot-  
den Tools.

**SHELDON  
MACHINE CO.**  
3255 Cottage  
Grove Ave.  
CHICAGO, ILL.

Please send circular on  
abrasive ma-  
chine described in July  
Hitchcock's Blue Book.

**CINCINNATI  
ELECTRICAL  
TOOL CO.**  
CINCINNATI, OHIO

Per your ad in July  
Hitchcock's Blue Book  
send data on the  
7-in. Disc Sanders.

**SKILSAW, INC.**  
3318 Elston Ave.  
CHICAGO, ILL.

Please send informa-  
tion on the long box  
racks as described in  
Hitchcock's Blue Book.

**STERLING  
FACTORY EQUIP.  
CO., INC.**  
PROVIDENCE, R. I.

Per your ad in July  
Hitchcock's Blue Book  
send data on the  
Oliver Drill/Winter.

**OLIVER  
INSTRUMENT CO.**  
1408 Maumee St.  
ADRIAN, MICH.

Per your ad in July  
Hitchcock's Blue Book  
send data on Grid-  
ers and pointers.

**HAMMOND  
MACHINERY  
BUILDERS**  
KALAMAZOO, MICH.

Per your ad in July  
Hitchcock's Blue Book  
send data on ball  
bearing sliders.

**BALDOR  
ELECTRIC CO.**  
4368 Duncan Ave.  
ST. LOUIS, MO.

Per your ad in July  
Hitchcock's Blue Book  
send data on Chila  
and Chucks.

**RIVETT LATHE &  
GRINDER, INC.**  
Brighton  
BOSTON, MASS.

19

Stick coupon on letterhead or postcard and sign name, title and firm name for catalog on the complete Wyco line.

**WYZENBEEK & STAFF**

13

Stick coupon on letterhead or postcard and sign name, title and firm for information on the Tru-Grip tap holder.

**PROCUNIER SAFETY CHUCK CO.**

Stick postcard and (Cuttin

20

Stick coupon on letterhead or postcard and sign name, title and firm for your bulletin on Nopak Valves.

**GALLAND-HENNING MFG. CO.**

14

Stick coupon on letterhead or postcard and sign name, title and firm for circular on The Clinchor.

**TOMKINS-JOHNSON CO.**

Stick postcard and Op

21

Stick this coupon on your letterhead and sign name, title and firm for data on the new Cincinnati wet abrasive cut-off machine.

**CINCINNATI ELECTRICAL TOOL CO.**

15

Stick coupon on letterhead or postcard and sign name, title and firm for catalog on Sheldon Tools.

**SHELDON MACHINE CO.**

SH postcard and TI

22

Stick this coupon on your letterhead and sign name, title and firm for information on Sterling racks.

**STERLING FACTORY EQUIPMENT CO., INC.**

16

Stick coupon on letterhead or postcard and sign name, title and firm for information on the 7-inch Disc Sanders.

**SKILSAW, INC.**

S postcard and Y L

23

Stick coupon on letterhead or postcard and sign name, title and firm for catalog on Grinders & Polishers.

**HAMMOND MACHINERY BUILDERS**

17

Stick coupon on letterhead or postcard and sign name, title and firm for full information on Oliver Drill Pointer.

**OLIVER INSTRUMENT CO.**

24

Stick coupon on letterhead or postcard and sign name, title and firm for bulletin on Rivett Collets & Chucks.

**RIVETT LATHE & GRINDER, Inc.**

18

Stick coupon on letterhead or postcard and sign name, title and firm for bulletin on Ball Bearing Grinders.

**BALDOR ELEC. CO.**

31

Stick coupon on letterhead or postcard and sign name, title and firm for catalog on Metal Cutting Band Saws.

**WELLS MFG. CORP.**

25

Stick coupon on letterhead or postcard and sign name, title and firm for information on Wittak Roll Feeds.

**WITTEK MFG. CO.**

32

Stick coupon on letterhead or postcard and sign name, title and firm for catalog of Ross Operating Valves.

**ROSS OPERATING VALVE CO.**

26

Stick coupon on letterhead or postcard and sign name, title and firm for your catalog on Flexible Shaft Machines.

**N. A. STRAND & CO.**

33

Stick coupon on letterhead or postcard and sign name, firm and address for circular on Titan Stud Setters.

**TITAN TOOL CO.**

27

Stick this coupon on your letterhead and sign name, title and firm for catalog of Carboloy products.

**CARBOLOY CO., INC.**

34

Stick coupon on letterhead or postcard and sign name, title and firm for catalog of Atlas Timken Bearing Equipped Lathes.

**ATLAS PRESS CO.**

28

Stick this coupon on your letterhead and sign name, title and firm for circular on Pioneer coolant pumps.

**PIONEER ENGINEERING & MFG. CO.**

35

Stick coupon on letterhead or postcard and sign name, title and firm for full information on BASA Hammers & Reversible Ratchet Wrench.

**GREENE-TWEED & CO.**

29

Stick coupon on letterhead or postcard and sign name, title and firm for catalog on Delta 14-inch Band Saws.

**DELTA MFG. CO.**

36

Stick coupon on letterhead or postcard and sign name, title and firm for catalog on the L-W Line.

**L-W CHUCK CO.**

30

Stick coupon on letterhead or postcard and sign name, title and firm for information on the Tornado Cleaner.

**BREUER ELECTRIC MFG. CO.**

Per your ad in July  
Hitchcock's Blue Book  
send me details of  
Fasda & Metal Standards.

WITTEK MFG. CO.  
4305-9 W. 27th Pl.  
CHICAGO, ILL.

Per your ad in July  
Hitchcock's Blue Book  
send me details of  
Cutting Unit Saw.

WELLS MFG.  
CORP.  
315 Seventh Ave.  
THREE RIVERS, MICH.

Per your ad in July  
Hitchcock's Blue Book  
send me details of  
Flexible Metal Mechs.

N. A. STRAND  
& CO.  
5001 N. Wolcott  
Ave.  
CHICAGO, ILL.

Per your ad in July  
Hitchcock's Blue Book  
send me details of  
Ross Operating Valves.

ROSS OPERATING  
VALVE CO.  
6484 Epworth Blvd.  
DETROIT, MICH.

Please send me a copy  
of catalog #37 of  
Hitchcock's Blue Book.

CARBOLOY CO.,  
INC.  
2985 E. Jefferson  
Ave.  
DETROIT, MICH.

Per your ad in July  
Hitchcock's Blue Book  
send me details of  
Batter.

TITAN TOOL CO.  
FAIRVIEW, PA.

Please send circular  
on Pioneer pumps  
described in July  
Hitchcock's Blue Book.

PIONEER  
ENGINEERING  
& MFG. CO.  
31 Melbourne St.  
DETROIT, MICH.

Per your ad in July  
Hitchcock's Blue Book  
send me details of  
Ken Bearing Patches.

ATLAS PRESS CO.  
750 N. Pitcher St.  
KALAMAZOO, MICH.

Per your ad in July  
Hitchcock's Blue Book  
send me details of  
14-in. Ball Saw.

DELTA MFG. CO.  
670 E. Vienna Ave.  
MILWAUKEE, WIS.

Per your ad in July  
Hitchcock's Blue Book  
send me information  
on Ratchet Wrench.

GREENE-TWEED  
& CO.  
109 Duane St.  
NEW YORK, N. Y.

Per your ad in July  
Hitchcock's Blue Book  
send me information  
on the Turner Cleaner.

BREUER ELECTRIC  
MFG. CO.  
842 Blackhawk St.  
CHICAGO, ILL.

Per your ad in July  
Hitchcock's Blue Book  
send me details of  
L-W line.

L-W CHUCK CO.  
1-7 N. St. Clair St.  
TOLEDO, OHIO



# OUTSTANDING TOOL VALUES



Working Surface  $5\frac{3}{4}$ " wide, 13" long. Consumes .5 Amp.



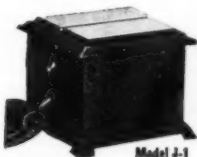
## L-W MAGNETIC CHUCK

**Waterproof for wet or dry grinding**  
A REAL MAGNETIC CHUCK that is adaptable for any purpose. Unconditionally guaranteed to furnish the highest magnetic holding power on either 110 or 220 volt direct current. Well designed and beautifully finished, highest quality workmanship throughout—complete with cord and plug—an outstanding value **\$45**

Demagnetizing Switch for  
L-W Magnetic Chuck \$8.75

Also made in the following sizes:  
 $6\frac{1}{2}$ "x18"—\$60 8"x24"—\$120  $10\frac{3}{4}$ "x37"—\$195

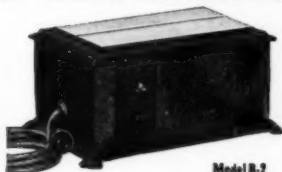
## NEW, IMPROVED DEMAGNETIZERS



Model J-1

**\$45.00**

Complete with switch and cord ready for use. Operates on 110 Volt A. C. Current.  
 $7\frac{1}{4}$ " wide,  $7\frac{1}{4}$ " long,  $6\frac{3}{4}$ " high.  
Shipping weight 35 pounds.



Model B-2

**\$65.00**

Complete with pilot light signal, switch and cord. Operates on 110 Volt A. C. Current.  
 $7\frac{3}{4}$ " wide,  $12\frac{1}{2}$ " long,  $6\frac{3}{4}$ " high.  
Shipping weight 55 pounds.

To meet the demand for a Demagnetizer that would properly fill the requirements of taking the magnetism out of work that has become magnetized through induction, we have designed and built two models for large and small work. A single pass over the stationary poles is sufficient to demagnetize the work completely. ● Use Quickmail Coupon No. 36

**L-W CHUCK CO., TOLEDO, OHIO**

# HAND

The most versatile tool actually a whole shop in one. More than 200 uses available.

Indispensable in most experimental laboratories and production line in large

For making, shaping metal products, alloy, tion materials, wood, precision jobs and places on intricate without removing part machine.

The finest, fastest and tool for its type ounces. Speed, 25, portable; simply plug socket. 110 volts, A

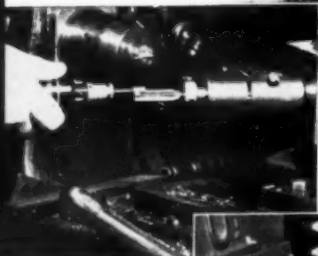
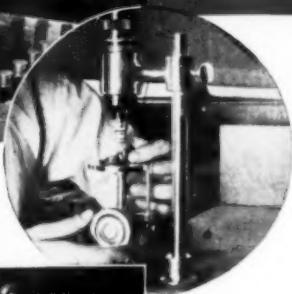
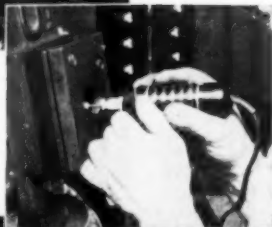
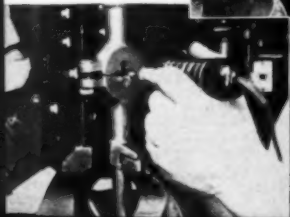
Try a Handes—you'll its smooth, rapid, a sponse and the wide it will do.

Order one Today on

De Luxe Handes  
ays for itself many  
nes over, often on  
e job.

Reaches those  
hard-to-get-at  
places. Its light  
weight and ease  
of handling in  
any position  
save time on a  
wide range of  
operations.

Indispensable in die  
shops and all metal  
working plants for  
touching up and pol-  
ishing every type of  
die, even when set on  
vices.



# DEE

## TOOL OF 1001 USES

versatile tool ever offered—  
while shop full of tools in  
than 200 accessories avail-

le W model and tool room,  
l laboratory, on the pro-  
in large and small plants.

, shaping, polishing all  
cts, alloys, glass, composi-  
als, wood, stone, etc. For  
obs and hard-to-get-at  
intricate machine parts,  
oving parts or dismantling

asiest and most powerful  
s type and weight, 12  
ee-1, 25,000 r.p.m. It is  
mply plug in any electric  
volts, AC or DC.

ee-1—you'll be amazed at  
rapid, almost human re-  
the wide range of work

Today on 10-Days Trial.

- Grinds
- Drills
- Saws
- Routs
- Sands
- Carves
- Polishes
- Engraves
- Sharpens
- Cuts
- Cleans



For Free Catalog, use  
Quickmail Coupon No. 3  
For Trial Offer, use  
Quickmail Coupon No. 70

**CHICAGO WHEEL  
AND MFG. CO.**

1101 W. Madison St., Dept. DD, Chicago, Ill.

DeWalt  
Model

**\$18<sup>50</sup>**

postpaid

**This New 40 Volt Arc Welding  
will save hundreds of dollars  
in your plant**



**30 DAYS  
TRIAL**

in your shop  
at our risk  
**PROVES**  
its your biggest  
money-making  
tool

*It's Easy to Own*

Don't go another day without getting facts about this amazing tool which cuts costs squarely in two in pattern work, tool room maintenance, production, salvage.

**THE NEW HOBART 40 VOLT  
"SIMPLIFIED" ARC WELDER**

which comes to you on 30 days trial—which has features many others leave off—which costs you less to operate—which handles either plain or coated rod with ease. The coupon below brings complete details. Send Coupon No. 51 to Hobart Bros., Box TB-77,

Troy, Ohio. One of the world's largest builders of arc welders.

**HOBART**

**THE FASTEST SELLING WELDER ON THE MARKET**

**Hobart Bros., Box TB-77, Troy, Ohio**  
Gentlemen: Please send me, without obligation, complete details on the new Hobart 40 Volt Arc Welder for use in

Also the complete catalog.

Name \_\_\_\_\_

Address \_\_\_\_\_

**FREE!**

IF YOU ARE  
INTERESTED  
IN THIS NEW  
ARC WELDER



Per year ad in July  
Hitchcock Blue Book  
send catalog showing  
Siewek Drill Co.

**76**  
**IEWEK TOOL  
CO.**

**FERNDAL, MICH.**

Please send information  
plan as described in  
Hitchcock Blue Book.

**77**  
**PROGRESSIVE  
WELDER CO.**

**737 Piquette  
DETROIT, MICH.**

Per year ad in July  
Hitchcock Blue Book  
send me catalog on  
Bushings.

**ACME  
INDUSTRIAL CO.**

**210 N. Laflin St.  
CHICAGO, ILL.**

Please send me elec-  
trical on the Draught  
machines described in  
Hitchcock Blue Book.

**ROCKFORD  
MACHINE  
TOOL CO.**

**ROCKFORD, ILL.**

Per year ad in July  
Hitchcock Blue Book  
send data on auto-  
matic centering ream-

**411**  
**F. J. LITTELL  
MACHINE CO.  
4125 Ravenswood  
Ave.  
CHICAGO, ILL.**

Per year ad in July  
Hitchcock Blue Book  
send me catalog as in  
Whitney Metal Tool.

**42**  
**WHITNEY METAL  
TOOL CO.**

**ROCKFORD, ILL.**

Per year ad in July  
Hitchcock Blue Book  
send me catalog of  
Punch Presses.

**78**  
**MARSHALLTOWN  
MFG. CO.**

**MARSHALLTOWN, IA**

Per year ad in July  
Hitchcock Blue Book  
send information on  
the Lathes Converter.

**MASTER MACH.  
& TOOL CO.**

**North Kansas City  
MO.**

Per year ad in July  
Hitchcock Blue Book  
send catalog on man-  
drels—valve, Check I.

**W.H. NICHOLSON  
& CO.**

**WILKES-BARRE, PA.**

Per year ad in July  
Hitchcock Blue Book  
send catalog on Power  
Tools.

**56**  
**MALL TOOL CO.**

**7742 So. Chicago Ave.  
CHICAGO, ILL.**

Per year ad in July  
Hitchcock Blue Book  
send catalog on Grin-  
ders and Buffers.

**VONNEGUT  
MOULDER  
CORP.**

**1805 Madison Ave.  
INDIANAPOLIS, IND.**

Per year ad in July  
Hitchcock Blue Book  
send catalog on Angle  
Dressers.

**48**  
**VINCO TOOL CO.**

**7348 Central Ave.  
DETROIT, MICH.**

43

Stick this coupon on your letterhead and sign name, title and firm for catalog of Marshalltown presses.

**MARSHALLTOWN MFG. CO.**

37

Stick this coupon on your letterhead and sign name, title and firm for catalog showing the complete line of Siewak Drill Jigs.

**SIEWEK TOOL CO.**

44

Stick coupon on letterhead or postcard and sign name, title and firm for information on the Master Lathe Converter.

**MASTER MACHINE & TOOL CO.**

38

Stick this coupon on your letterhead and sign name, title and firm for information on Progressive welding fixtures.

**PROGRESSIVE WELDER CO.**

45

Stick this coupon on your letterhead and sign. If you wish only one catalog, cross out either valves or mandrels.

**W. H. NICHOLSON**

39

Stick coupon on letterhead or postcard and sign name, title and firm for bulletin on Drill Jig Bushings.

**ACME INDUSTRIAL CO.**

46

Stick this coupon on a postcard and sign name, title and firm name to get catalog on Mall Power Tools.

**MALL TOOL CO.**

40

Use this coupon as a mailing label when you write for circulars on Rockford machines.

**ROCKFORD MACHINE TOOL CO.**

47

Stick coupon on letterhead or postcard and sign name, title and firm for catalog on Merschke Grinders.

**VONNEGUT MOULDER CORP.**

41

Stick coupon on letterhead or postcard and sign name, title and firm for information on automatic centering reels.

**F. J. LITTELL MACHINE CO.**

48

Stick coupon on letterhead or postcard and sign name, title and firm for circular on Vinco Angle Dressers.

**VINCO TOOL CO.**

42

Stick coupon on letterhead or postcard and sign name, title and firm for a catalog on the Whitney line of tools.

**WHITNEY METAL TOOL CO.**

our letter-  
title and  
owing the  
k Drill Jigs.

CO.

our letter-  
title and  
n Progress-

ER CO.

erhead or  
ame, title  
on Drill

L CO.

mailing  
irculars

TOOL CO.

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IE CO.

head or  
s, title  
on the

55

Stick coupon on letterhead or postcard and sign name, title and firm for information and prices on Colonial Bushings.

COLONIAL BUSHINGS, INC.

56

Stick this coupon on a postcard or letterhead and mail to receive a rivet price list and illustrations of Chicago Automatic Rivet Setters.

CHICAGO RIVET &  
MACHINE CO.

57

Stick coupon on letterhead or postcard and sign name, title and firm for information on the combination vise and drill table.

MODERN MACHINE TOOL  
CO.

58

Stick coupon on letterhead or postcard and sign name, title and firm for catalog on Progressive End Mills.

PROGRESSIVE TOOL  
& CUTTER CO.

59

Stick coupon on letterhead or postcard and sign name, title and firm for catalog on Diamond-Grip Colllets.

SUTTON TOOL CO.

60

Stick this coupon on a postcard or letterhead to receive data on the Precision Tool Head.

PRECISION TOOL CO.

47

Stick coupon on letterhead or postcard and sign name, title and firm for information on High Speed Tappers.

ETTCO TOOL CO.

50

Stick this coupon on your letterhead and sign name, title and firm for folder on the Super Speed Press.

SUPER SPEED PRESS CORP.

51

Stick coupon on letterhead or postcard and sign name, title and firm for information on the Hobart Arc Welder.

HOBART BROTHERS

52

Stick coupon on letterhead or postcard and sign name, title and firm for your General Catalog.

VICTOR MACHINERY  
EXCHANGE, Inc.

53

Stick this coupon on your letterhead and sign name, title and firm for information on the Taylor-Winfield spot welder.

TAYLOR-WINFIELD CORP.

54

Stick coupon on letterhead or postcard and sign name, title and firm for your new Catalog on Federal Test Indicators.

FEDERAL PRODUCTS CORP.

61

Per your ad in July  
Hitchcock's Blue Book  
send me a High  
Speed Tap.

**ETTCO TOOL CO.**  
598 Johnson Ave.  
BROOKLYN, N. Y.

Per your ad in July  
Hitchcock's Blue Book  
send information on  
Colonial Bearings.

**COLONIAL  
BUSHINGS, INC.**  
DETROIT, MICH.

Per your ad in July  
Hitchcock's Blue Book  
send folder describing  
the Super and press.

**SUPER SPEED  
PRESS CORP.**  
55 Liberty St.  
NEW YORK, N. Y.

Per your ad in July  
Hitchcock's Blue Book  
send information on  
price list.

**CHICAGO RIVET  
& MACHINE CO.**  
1855 S. 54th Ave.  
Cicero P. O.  
CHICAGO, ILL.

Per your ad in July  
Hitchcock's Blue Book  
send information on  
your new "Arc Welder."

**HOBART  
BROTHERS**  
Box TB-77  
TROY, OHIO

Per your ad in July  
Hitchcock's Blue Book  
send information on  
the combination vice.

**MODERN MACH.  
TOOL CO.**  
Jackson, Mich.

Per your ad in July  
Hitchcock's Blue Book  
send me your General  
Catalog.

**VICTOR MACHY.  
EXCHANGE, INC.**  
251 Centre St.  
NEW YORK, N. Y.

Per your ad in July  
Hitchcock's Blue Book  
send me catalog on  
Progressive and Mills.

**PROGRESSIVE  
TOOL &  
CUTTER CO.**  
FERNDAL, MICH.

Per your ad in July  
Hitchcock's Blue Book  
send information on  
the T-W spot welder.

**TAYLOR-  
WINFIELD CORP.**  
14307 Third Ave.  
DETROIT, MICH.

Per your ad in July  
Hitchcock's Blue Book  
send me catalog on  
Diamond and Collets.

**SUTTON  
TOOL CO.**  
2836 W. Grand Bl.  
DETROIT, MICH.

Per your ad in July  
Hitchcock's Blue Book  
send me catalog on  
Test Indicators.

**FEDERAL  
PRODUCTS CORP.**  
1144 Eddy St.  
PROVIDENCE, R. I.

Per your ad in July  
Hitchcock's Blue Book  
send bullet on the  
Test Head.

**PRECISION  
TOOL CO.**  
BRIDGEPORT, CONN.



47

Stick coupon on letterhead or postcard and sign name, title and firm for catalog on Putnam End Mills, etc.

**PUTNAM TOOL CO.**

61

Stick coupon on letterhead or postcard and sign name, title and firm for catalog No. 7 and Reference Manual.

**THE APEX MACHINE & TOOL CO.**

68

Stick coupon on letterhead or postcard and sign name, title and firm for full information on Federal Presses.

**FEDERAL PRESS CO.**

62

Stick this coupon on your letterhead and sign name, title and firm for information on Eisler welders.

**EISLER ENGINEERING CO., INC.**

69

Stick coupon on letterhead or postcard and sign name, title and firm for your copy of the banner catalog of Box Tools.

**BANNER MFG. CO.**

63

Stick coupon on letterhead or postcard and sign name, title and firm for information on the Magna-Sine.

**ROBBINS ENGINEERING CO.**

70

Stick coupon on letterhead or postcard and sign name, title and firm for information on the Schmidt Marking Machines.

**GEO. T. SCHMIDT, INC.**

64

Stick this coupon on your letterhead and sign name, title and firm for data on American broaching machines.

**AMERICAN BROACH & MACHINE CO.**

71

Stick coupon on letterhead or postcard and sign name, title and firm for full information on Universal Vises.

**ODIN UNIVERSAL CORP.**

65

Stick coupon on letterhead or postcard and sign name, title and firm for information on the Do-All Machines.

**CONTINENTAL MCH. SPECIALTIES**

72

Stick coupon on letterhead or postcard and sign name, title and firm for bulletin on Surface Grinders.

**GALLMEYER & LIVINGSTON CO.**

66

Stick this coupon on your letterhead and sign name, title and firm for information on the Sparking Speed-Bloc Sander.

**STERLING PRODUCTS CO.**

Per your ad in July  
Hitchcock Blue Book  
send catalog, 9 and  
Reference Manual.

**APEX MACHINE  
& TOOL CO.**  
3rd & Madison Sts.  
DAYTON, OHIO

Per your ad in July  
Hitchcock Blue Book  
send me catalog on  
Putnam End Mills.

**PUTNAM TOOL  
CO.**  
2983 Charlevoix Av.  
DETROIT, MICH.

Please send circular on  
your new welder  
as described in July  
Hitchcock Blue Book.

**EISLER ENGIN'R'G  
CO., INC.**  
746 S. 13th St.  
NEWARK, N. J.

Per your ad in July  
Hitchcock Blue Book  
send full information  
on Federal Presses.

**FEDERAL PRESS  
CO.**  
ELKHART, IND.

Per your ad in July  
Hitchcock Blue Book  
send bulletins on the  
Magna-Blast.

**ROBBINS ENG.  
CO.**  
639 Mt. Elliott  
DETROIT, MICH.

Per your ad in July  
Hitchcock Blue Book  
send me catalog  
on Banner Box Tools.

**BANNER MFG.  
CO.**  
1873 Clybourn Ave.  
CHICAGO, ILL.

Please send literature  
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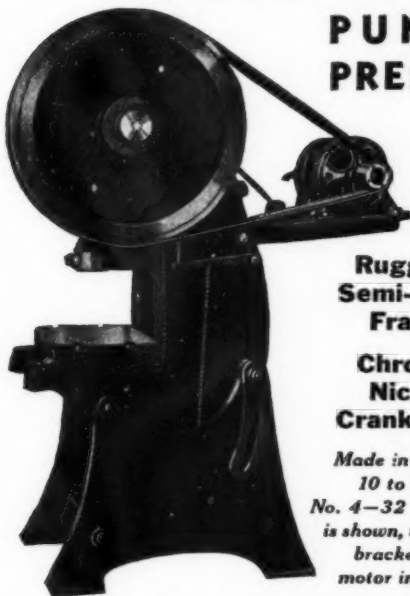
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An ideal machine for all small die, jig and tool work of all kinds on laying out, milling, drilling and boring operations.

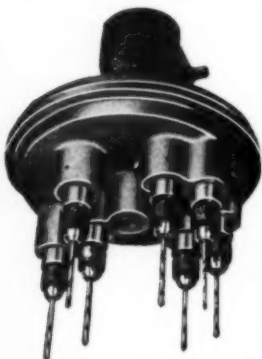
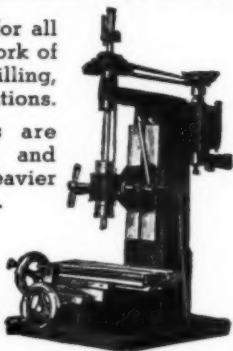
Substantial savings are made in its simplicity and speed and in releasing heavier machines for larger work.

## Table Dimensions

5½" x 14½"

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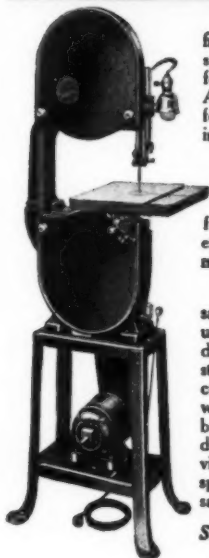
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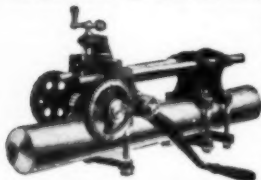
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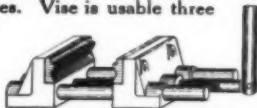
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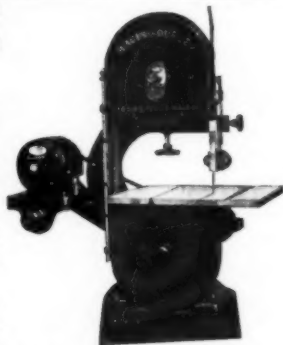
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Cuts Sheet Metal To Any Shape

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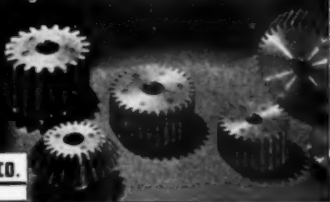
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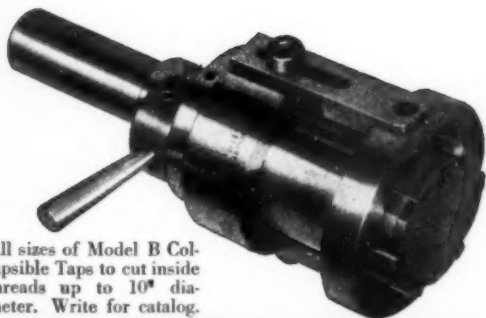
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TABLE AND BENCH  
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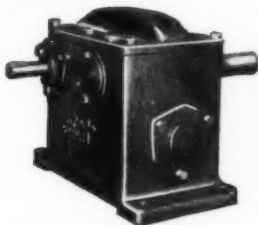
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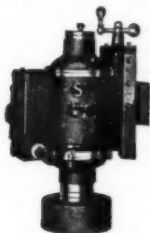
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## MACHINE TOOL GRINDERS



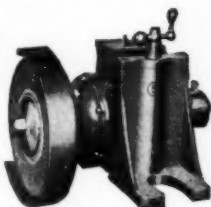
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Sizes: 2 H. P. to 10 H. P.

Speed: 3600, 1800 or 1200 R.P.M.

The  
**STANDARD  
PARALLEL  
GRINDER**

For Lathe, Shaper,  
Planer, etc.



Used for grinding rolls, spindles, bushings, journals, etc.

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**Save on Pumping Costs!**

Elimination of piping and extra parts makes the "Gusher" simple to operate and easy to keep clean. This portable pump and tank combination is a complete unit, always ready for use.

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Affords  
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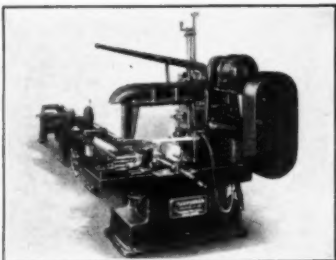
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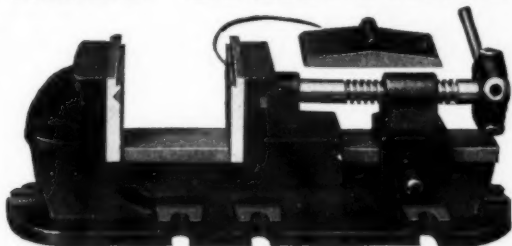
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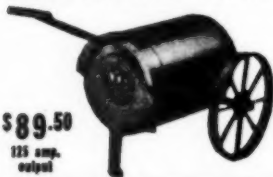
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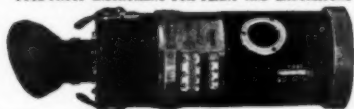
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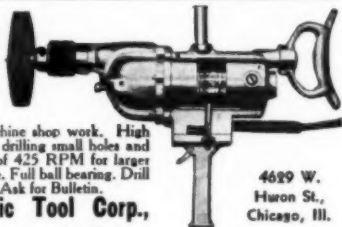
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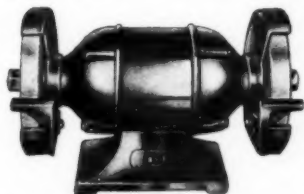


Luma Marking and  
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For grinding any angle accurately.

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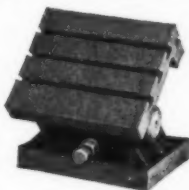
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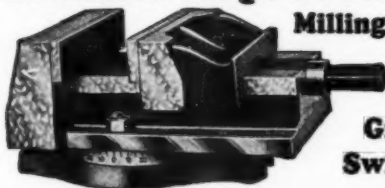
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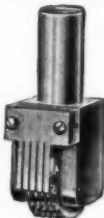
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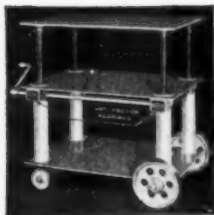
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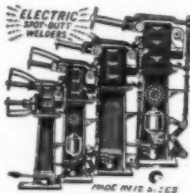
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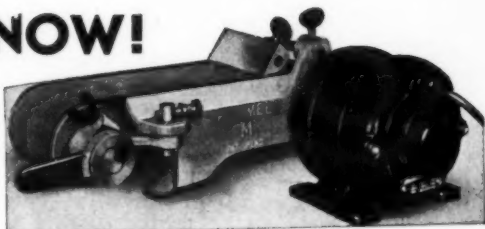
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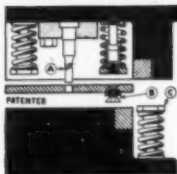
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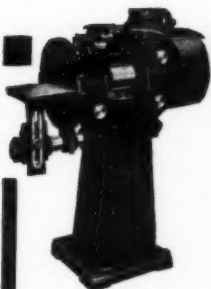
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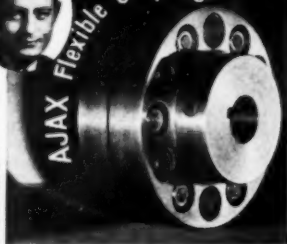
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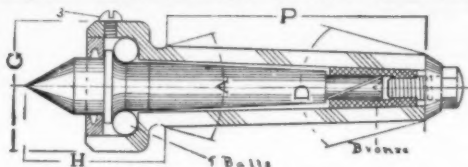
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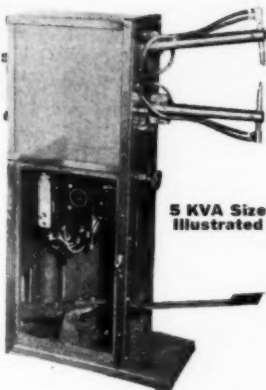


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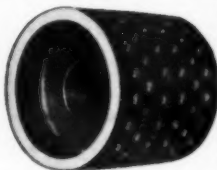
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Vince Tool Co., Detroit, Mich.

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**Baling Presses**  
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Wells Mfg. Co., Three Rivers, Mich.

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Hardings Brothers, Inc., Elmira, N. Y.

**Bench Punches**  
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Buffalo Forge Co., Buffalo, N. Y.  
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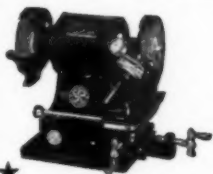
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Culman Wheel Co., 1360 Altgeld St., Chicago, Ill.

## Chauldering Machines, Automatic

Grant Mfg. & Mch. Co., Bridgeport, Conn.

## Chasers, Thread

Jones & Lamson Mch. Co., Springfield, Vt.

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Houser Mfg. Co., 1000 No. Pauline St., Chicago, Ill.  
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Tomkins-Johnson Co., Jackson, Mich.

## Chucks, Automatic

Proconier Safety Chuck Co., 14 S. Clinton St., Chicago

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Proconier Safety Chuck Co., 14 S. Clinton St., Chicago  
Tomkins-Johnson Co., Jackson, Mich.

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Errington Mch. Labo. Staten Island, N. Y.  
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Hartford Special Mch. Co., Hartford, Conn.  
Proconier Safety Chuck Co., 14 S. Clinton St., Chicago

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Morrison Mach. Products, Inc., Elmira, N. Y.

## Chucks, Quick Change

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## Cold Saws

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Armco Co., Milwaukee, Wis.  
Continental Mch. Specialties, Minneapolis  
Grob Brothers, Grafton, Wis.  
Henry & Wright Mfg. Co., Hartford, Conn.  
Oliver Machinery Co., Grand Rapids, Mich.  
Oliver Instrument Co., Adrian, Mich.

## Die Sets

Baumach Mfg. Co., E. A., 1812 So. Kellbourne Ave., Chicago

## Dies, Hole Punching

Strippit Corp., Buffalo, N. Y.

## Dies, Notching

Strippit Corp., Buffalo, N. Y.

## Dividing Heads

Wm. Carroll & Son, Norwood, Cincinnati, O.  
Master Machine & Tool Co., North Kansas City, Mo.

## Dowel Pins, Steel

Acme Industrial Co., 210 N. Laflin St., Chicago, Ill.  
Baumach Mfg. Co., E. A., 1812 So. Kellbourne Ave., Chicago

## Dressers, Angle Tangent to Radius

Vince Tool Co., Detroit, Mich.

## Drills and Taps

Eltee Tool Co., 504 Johnson Av., Brooklyn, N. Y.

## Drill Bushings

Acme Industrial Co., 210 N. Laflin St., Chicago, Ill.  
Universal Eng. Corp., Frankensmuth, Mich.

## Drills, Electric

Skilaw, Inc., 3304 Elston Av., Chicago, Ill.  
Speedway Mfg. Co., 1823 So. 62nd Ave., Cicero, Ill.  
Standard Electrical Tool Co., Cincinnati, O.  
Tanco Electric Motor Co., Leipsic, Ohio  
Wedach Electric Tool Co., 3825 W. Huron St., Chicago, Ill.

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**Hartford, Conn.**

## Classified Finding Index

### Drill Grinders

Star Mchs. & Eng. Co., Bloomfield, N. J.

### Drill Heads, Multiple Spindle

Sellow Machine Tool Co., Pawtucket, R. I.

### Drill Holder Bushings

Banner Mfg. Co., 1875 Cuyabara Ave., Chgo.

### Drill Jigs, Special

Heuser Mfg. Co., 1038 No. Paulina St., Chicago, Ill.

Siewek Tool Co., Ferndale, Mich.

### Drill Jigs, Universal

Heuser Mfg. Co., 1038 No. Paulina St., Chicago, Ill.

Siewek Tool Co., Ferndale, Mich.

### Drilling Attachments, High Speed

Graham Manufacturing Co., Providence, R. I.

Dalrae Tools Co., Syracuse, N. Y.

Henry & Wright Mfg. Co., Hartford, Conn.

### Drilling Machines, Bench

Atlas Press Co., Kalamazoo, Mich.

Buffalo Forge Company, Buffalo, N. Y.

Cleareman Mchs. Tool Co., Green Bay, Wis.

High Speed Hammer Co., Rochester, N. Y.

### Drilling Machines, Multiple Spindle

Buffalo Forge Co., Buffalo, N. Y.

Henry & Wright Mfg. Co., Hartford, Conn.

### Drilling Machines, Portable Electric

Skilaw, Inc., 3304 Kinton Av., Chicago, Ill.

Speedway Mfg. Co., 1822 So. 52nd Ave., Chicago, Ill.

Strand Co., N. A., 5081 N. Lincoln Street, Chicago, Ill.

Tenno Electric Motor Co., Leipsic, Ohio

White Dental Mfg. Co., 10 E. 40th Street, New York, N. Y.

### Drilling Machines, Post

Buffalo Forge Co., Buffalo, N. Y.

Henry & Wright Mfg. Co., Hartford, Conn.

### Drilling Machines, Radial

Henry & Wright Mfg. Co., Hartford, Conn.

Western Machine Tool Wks., Holland, Mich.

### Drilling Machines, Sensitive

Atlas Press Co., Kalamazoo, Mich.

Buffalo Forge Company, Buffalo, N. Y.

Burke Machine Tool Co., Cincinnati, Oh.

Henry & Wright Mfg. Co., Hartford, Conn.

### Drilling Machines, Vertical

Atlas Press Co., Kalamazoo, Mich.

Buffalo Forge Company, Buffalo, N. Y.

Henry & Wright Mfg. Co., Hartford, Conn.

### Drives, Lathe

Cushman Wheel Co., 1389 Altgeld St., Chgo.

Hardinge Brothers, Inc., Elmira, N. Y.

### Electric Motors with Integral Brakes

Star Mchs. & Eng. Co., Bloomfield, N. J.

### Electrical Instruments

Illinois Testing Laboratories, Inc., 150 W. Austin Ave., Chicago

### Elevating Tables

Hamilton Tool Company, Hamilton, Ohio

Midwest Tool & Engineering Co., Dayton, O.

### Emery Stands

Carroll Mfg. Co., L. W., Cincinnati, O.

### Emery Wheel Dressers and Cutters

Deemed Stephen Mfg. Co., Urbana, Ohio

Western Tool & Mfg. Co., Springfield, O.

### End Mills

Progressive Tool & Cutter Co., Ferndale, Mich.

Putnam Tool Co., Detroit, Mich.

### Etching Machines, Electric

Brewster Co., William, 50 Church St., N. Y. C.

Loma Electric Equipment Co., Toledo, Oh.

Printz Electric Co., Detroit, Mich.

### Exhaust Blowers

Buffalo Forge Co., Buffalo, N. Y.

### Experimental Work

American Tool Works, Inc., Hartford, Conn.

### Feeder Tubes

Sutton Tool Co., Detroit, Mich.

### Feed Fingers

Morrison Mach. Products, Inc., Elmira, N. Y.

### Feed Fingers for Auto. Screw Mchs.

Modern Collet & Machine Co., Ecorse, Mich.

Sutton Tool Co., Detroit, Mich.

### Files

Grobet File Co., 2 Park Place, New York City

### Files, Rotary

White Dental Mfg. Co., 10 E. 40th Street, New York, N. Y.

### Filing Machines

Continental Mchs. Specialties, Minneapolis

Grob Bros., West Allis, Wis.

Oliver Instrument Co., Adrian, Mich.

### Filing Room Equipment

Wardwell Manufacturing Co., Cleveland, O.

### Flexible Couplings

Ajax Flexible Coupling Co., Westfield, N. Y.

Lorejoy Flex. Coupling Co., 5026 Lake, Chgo.

### Flexible Shafts and Accessories

Wysenbeck & Staff, Inc., 642 Washington Blvd., Chicago

### Flexible Shaft Couplings

Lorejoy Flex. Coupling Co., 5026 Lake, Chgo.

W. H. Nicholson & Co., Wilkes-Barre, Pa.

### Flexible Shaft Machinery

Wysenbeck & Staff, Inc., 642 Washington Blvd., Chicago

### Floating Holders

Gairing Tool Co., Detroit, Mich.

### Fine Lathes

Marshalltown Mfg. Co., Marshalltown, Ia.

### Flux Welders

Marshalltown Mfg. Co., Marshalltown, Ia.

### Forgings, Hollow Bored

American Hollow Forging Co., Erie, Pa.

### Forming Tools

Banner Mfg. Co., 1875 Cuyabara Ave., Chgo.

Miligan Tool Co., Detroit, Mich.

Wiley's Carbide Tool Co., Detroit, Mich.

### Furniture, Machine Shop

Standard Pressed Steel Co., Jenkintown, Penna.

Western Tool & Mfg. Co., Springfield, O.

### Gages

Federal Products Corp., Providence, R. I.

Micro Products Co., Detroit, Mich.

### Gages, Chrome Plated

Vince Tool Co., Detroit, Mich.

### Gages, Gears, Spur and Helical

Vince Tool Co., Detroit, Mich.

### Gages, Pin, Plug, Ring and Snap

American Tool Works, Inc., Hartford, Conn.

### Gages, Taper

Hartford Special Mch. Co., Hartford, Conn.

Vince Tool Co., Detroit, Mich.

### Gauges, Pressure

Marshalltown Mfg. Co., Marshalltown, Ia.

### Gear Cutters

Brown & Sharpe Mfg. Co., Providence, R. I.

### Gears

Abart Gear & Mchs. Co., 4932 W. 10th St., Chicago, Ill.

Chicago Gear Wks., 700 W. Jackson, Chgo.

Taylor Machine Co., Cleveland, Ohio



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# Classified Finding Index

- Gears, Master**  
Vince Tool Co., Detroit, Mich.
- Gears, Worm**  
Michigan Tool Co., Detroit, Mich.
- Gear Checking Machines**  
Michigan Tool Co., Detroit, Mich.
- Gear Motors**  
Star Mch. & Eng. Co., Bloomfield, N. J.
- Generators**  
Chicago Electric Co., 1338 W. 22nd St., Chicago, Ill.  
Janette Mfg. Co., 552 W. Monroe St., Chgo.  
Star Mch. & Eng. Co., Bloomfield, N. J.
- Grease Cups**  
Essex Brass Corp., Detroit, Mich.
- Grinders, Air**  
M. H. Products, Detroit, Mich.
- Grinders, Bench**  
Baker Electric Co., St. Louis, Mo.  
Carroll Mfg. Co., L. W., Cincinnati, O.  
Hammond Machinery Builders, Kalamazoo, Mich.  
Vonnegut Moulder Corp., Indianapolis, Ind.
- Grinders, Disc**  
Oliver Machinery Co., Grand Rapids, Mich.  
Wynenbeck & Staff, Inc., 642 Washington Blvd., Chicago
- Grinders, Electric**  
Chicago Wheel & Mfg. Co., M. C. Tool Div., 1101 W. Monroe St., Chicago, Ill.  
Skilaw, Inc., 3304 Elston Av., Chicago, Ill.  
Standard Electrical Tool Co., Cincinnati, O.
- Grinders, Electric Bench**  
Baker Electric Co., St. Louis, Mo.  
Valley Electric Corp., St. Louis, Mo.
- Grinders, Flexible Shaft**  
Mall Tool Co., 7742 S. Chicago Ave., Chicago N. A. Strand & Co., 5001 N. Lincoln, Chgo.
- Grinders, Hand**  
Chicago Wheel & Mfg. Co., M. C. Tool Div., 1101 W. Monroe St., Chicago, Ill.  
Dumore Co., Racine, Wis.  
M. H. Products, Detroit, Mich.  
Skilaw, Inc., 3304 Elston Av., Chicago, Ill.
- Grinders, Heavy Duty**  
Vonnegut Moulder Corp., Indianapolis, Ind.
- Grinders, High Speed**  
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Mall Tool Co., 7742 S. Chicago Ave., Chicago M. H. Products, Detroit, Mich.
- Grinders, Pedestal Electric**  
Baker Electric Co., St. Louis, Mo.  
Valley Electric Corp., St. Louis, Mo.
- Grinders, Swing Frame**  
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- Grinders and Polishers, Belt**  
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- Grinding Attachments, Drill**  
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Oliver Instrument Co., Adrian, Mich.
- Grinding, Centerless (Contract)**  
Commercial Centerless Grinding Co., 6508 Carnegie Ave., Cleveland, Ohio  
Porter Machine Co., Cincinnati, O.
- Grinding Machines, Belt**  
Armstrong Co., Milwaukee, Wis.  
Production Machine Co., Greenfield, Mass.  
Wells Sales Corp., 96 Warren St., New York
- Grinding Machines, Cutter, Reamer and Tool**  
Brown & Sharpe Mfg. Co., Providence, R. I.  
National Machine Tool Co., Racine, Wis.  
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- Grinding Machines, Drill**  
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- Grinding Machines, Floor**  
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- Grinding Machines, Internal**  
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- Grinding Machines, Portable Electric**  
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Mall Tool Co., 7742 S. Chicago Ave., Chicago National Machine Tool Co., Racine, Wis.  
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White Dental Mfg. Co., 10 E. 40th Street, New York, N. Y.
- Grinding Machines, Surface**  
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Rogers & Co., Samuel C., Buffalo, N. Y.
- Grinding Machines, Tap**  
Gallmeyer & Livingston Co., Grand Rapids
- Grinding Machines, Tool**  
Hammond Machinery Builders, Kalamazoo, Rogers & Co., Samuel C., Buffalo, N. Y., Mich.
- Grinding Machines, Universal**  
Brown & Sharpe Mfg. Co., Providence, R. I.
- Grinding Service**  
Machinists Tool-Grinding & Mfg. Co., 3038 W. Van Buren, Chicago, Ill.
- Grinding Wheels**  
Chicago Wheel & Mfg. Co., M. C. Tool Div., 1101 W. Monroe St., Chicago, Ill.
- Grinding Wheels, Mounted**  
Chicago Wheel & Mfg. Co., M. C. Tool Div., 1101 W. Monroe St., Chicago, Ill.
- Grinding Wheels On Shafts**  
Chicago Wheel & Mfg. Co., M. C. Tool Div., 1101 W. Monroe St., Chicago, Ill.
- Hack Saw Blades**  
Armstrong-Hum Mfg. Co., 341 N. Francisco Ave., Chicago
- Hack Saw Machines**  
Armstrong-Hum Mfg. Co., 341 N. Francisco Av. Chicago  
Wells Mfg. Corp., Three Rivers, Mich.
- Hammers, Electric**  
Wodeck Electric Tool Corp., 2629 W. Huron St., Chicago, Ill.
- Hammers, Tinnors**  
Whitney Mfg. Co., W. A., Rockford, Ill.
- Hammers, Mallets and Malls**  
Chicago Kawhido Mfg. Co., 1200 Elston Av., Chicago, Ill.
- Hammers, Riveting**  
High Speed Hammer Co., Rochester, N. Y.
- Hammers, Soft Faced**  
Greene Tweed & Co., 109 Duane St., New York, N. Y.
- Hand Pumps**  
Hickner Pump Co., Grand Rapids, Mich.
- Hand Punches**  
Whitney Mfg. Co., W. A., Rockford, Ill.
- Hand Saws, Portable Electric**  
Skilaw, Inc., 3304 Elston Av., Chicago, Ill.
- Hand Screw Machines, Precision Bench Type**  
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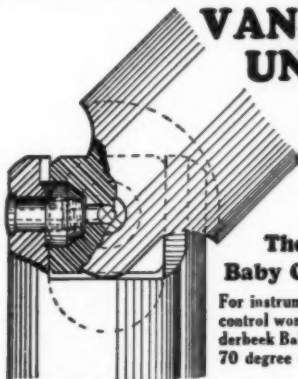
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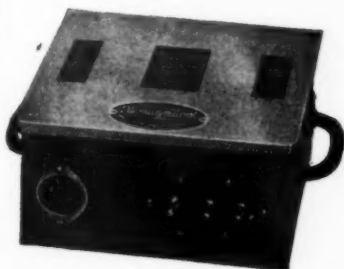
- Heads, Boring**  
Flynn Manufacturing Co., Detroit, Mich.
- Hobs**  
Michigan Tool Co., Detroit, Mich.
- Hole Cutters**  
Wysenbeek & Staff, Inc., 642 Washington Blvd., Chicago
- Hollow Adjustable Mills**  
Gairing Tool Co., Detroit, Mich.
- Hydraulic Valves**  
Galland-Henning Mfg. Co., Milwaukee, Wis.  
W. H. Nicholson & Co., Wilkes-Barre, Pa.
- Index Centers**  
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Wm. Carroll & Son, Norwood, Cincinnati, O.
- Indicating Dies**  
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- Indicators, Surface Test**  
Reich Mfg. Co., J. R., Dayton, Ohio
- Jigs and Fixtures**  
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- Knife Grinders**  
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- Lathe Centers**  
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- Lathe Drives**  
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- Lathes, Bench**  
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Delta Mfg. Co., Milwaukee, Wis.  
Hardinge Brothers, Inc., Elmira, N. Y.  
Rivett-Lathed Grinder Inc., Brighton, Boston  
Sheldon Machine Co., 8255 Cottage Grove Ave., Chicago, Ill.  
South Bend Lathe Works, South Bend, Ind.
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South Bend Lathe Works, South Bend, Ind.
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- Lathes, Gap Bed**  
South Bend Lathe Works, South Bend, Ind.
- Lathes, Polishing and Buffing**  
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- Lathes, Precision Bench Screw Cutting**  
Hardinge Brothers, Inc., Elmira, N. Y.  
South Bend Lathe Works, South Bend, Ind.
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South Bend Lathe Works, South Bend, Ind.
- Lathes, Speed**  
Schauer Machine Co., Cincinnati, Ohio
- Lathes, Turret**  
Jones & Lamson Mch. Co., Springfield, Vt.
- Layout Tables**  
Parsons-Merritt Co., Van Dyke, Mich.
- Leader Pins, Steel**  
Acme Industrial Co., 419 N. Carpenter St., Chicago, Ill.
- Leather Belting, All Types**  
Chicago Rawhide Mfg. Co., 1300 Elston Ave., Chicago, Ill.
- Leather Oil Retainers**  
Chicago Rawhide Mfg. Co., 1300 Elston Ave., Chicago, Ill.  
Gits Bros. Mfg. Co., 1860 S. Kildbourn, Chgo.
- Leather Pk., Hydraulic & Pneumatic**  
Chicago Rawhide Mfg. Co., 1300 Elston Ave., Chicago, Ill.
- Live Lathe Centers**  
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Sturdimatic Tool Co., Detroit, Mich.
- Lubricators, Air**  
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Fauver J. N., Detroit, Mich.  
Norgren, C. A., Denver, Colorado
- Lubricators, Automatic**  
Fauver, J. N., Detroit, Mich.  
Gits Bros. Mfg. Co., 1860 S. Kildbourn, Chgo.  
Greene Tweed & Co., 109 Duane St., New York, N. Y.  
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Norgren Co., C. A., Denver, Colo.
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- Marking Machines**  
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- Micrometers**  
Micro Products Co., Detroit, Mich.
- Milling Attachments**  
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Burke Machine Tool Co., Connecticut, Ohio  
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Dalvan Tools Co., Syracuse, N. Y.  
Mantor Machine & Tool Co., North Kansas City, Mo.
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- Milling Machines, Hand**  
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- Milling Machines, Plain**  
Brown & Sharpe Mfg. Co., Providence, R. I.  
Burke Machine Tool Co., Connecticut, Ohio
- Motors**  
Chicago Electric Co., 1338 W. 22nd St., Chicago, Ill.  
Janette Mfg. Co., 552 W. Monroe St., Chgo.
- Motors, Small Universal**  
Speedway Mfg. Co., Cicero, Ill.
- Motor-Generator Sets**  
Chicago Electric Co., 1338 W. 22nd St., Chicago, Ill.  
Janette Mfg. Co., 552 W. Monroe St., Chgo.
- Motor Drives, Universal**  
Culman Wheel Co., 1359 Altgeld St., Chgo.  
Steege Machinery Co., 18 S. Clinton St., Chicago, Ill.
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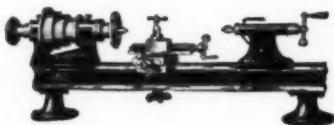
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## Motor Starters

The Lincoln Electric Co., Cleveland, O.

## Moulds & Lathes, Hammer and Vise.

Johnson Tool Co., East Providence, R. I.

## Multiple Oilers

Gilt Bros. Mfg. Co., 1880 S. Kilbourn, Chgo.

## Nibbling Machines

Libert Machine Co., Green Bay, Wis.

National Machine Tool Co., Racine, Wis.

## Nitrided Products

Universal Eng. Corp., Frankenmuth, Mich.

## Numbering Machines

Numberal Stamp & Tool Co., Staten Island, N. Y.

## Oil Cups

Knox Brass Corp., Detroit, Mich.

Gilt Bros. Mfg. Co., 1880 S. Kilbourn, Chgo.

## Oil Gauges

Knox Brass Corp., Detroit, Mich.

Gilt Bros. Mfg. Co., 1880 S. Kilbourn, Chgo.

## Oil and Grease Seals

Gilt Bros. Mfg. Co., 1880 S. Kilbourn, Chgo.

## Operating Valves

Galland-Henning Mfg. Co., Milwaukee, Wis.

## Packing, Hydraulic

Chicago Rawhide Mfg. Co., 1200 Elston Av., Chicago, Ill.

## Packings, Steam

Grease Tread & Co., 109 Duane St., New York, N. Y.

## Pins and Lacing for Belting

Chicago Rawhide Mfg. Co., 1200 Elston Av., Chicago, Ill.

## Pins, Leader And Dowel

Acme Industrial Co., 419 N. Carpenter St., Chicago, Ill.

Reimbach Mfg. Co., E. A., 1812 So. Kilbourn Ave., Chicago

## Pipe Cutters

Ridge Tool Co., Elvira, Ohio

## Pipe Vises

Ridge Tool Co., Elvira, Ohio

## Pipe Wrenches

Ridge Tool Co., Elvira, Ohio

## Point Thinning Machines

Oliver Instrument Co., Adrian, Mich.

## Press Brakes

Allsteel Press Co., 12015 S. Peoria St., Chicago

Drele & Krump Mfg. Co., 7440 Loomis Blvd., Chicago, Ill.

## Press Feeds

Littell Machine Co., F. J., 4125 Ravenswood Ave., Chicago, Ill.

Wittak Mfg. Co., 4809 W. 24th Place, Chgo.

## Presses, Arbor

Atlas Press Co., Kalamazoo, Mich.

Furner Machine Co., Racine, Wis.

Greenard Arbor Press Co., Nashua, N. H.

W. H. Nicholson & Co., Wilkes-Barre, Pa.

Sheldon Machine Co., 8265 Cottage Grove Ave., Chicago, Ill.

Wilson, E. R., Buffalo, N. Y.

## Presses, Bench

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## Presses, Bench

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Rockford Iron Works, Rockford, Ill.

Furner Machine Co., Racine, Wis.

## Presses, Forming

Marshalltown Mfg. Co., Marshalltown, Ia.

## Presses, High Speed

Super Speed Press Corp., 55 Liberty St., New York, N. Y.

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Federal Press Co., Elkhart, Indiana

Marshalltown Mfg. Co., Marshalltown, Ia.

Rockford Iron Works, Rockford, Ill.

## Presses, Power

Allsteel Press Co., 12015 S. Peoria St., Chicago

Drele & Krump Mfg. Co., 7440 Loomis Blvd., Chicago, Ill.

Federal Press Co., Elkhart, Indiana

Rockford Iron Works, Rockford, Ill.

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Drele & Krump Mfg. Co., 7440 Loomis Blvd., Chicago, Ill.

Henry & Wright Mfg. Co., Hartford, Conn.

Lawthwaite Mfg. Co., T. H., 311 E. 47th St., New York

Marshalltown Mfg. Co., Marshalltown, Ia.

Super Speed Press Corp., 55 Liberty St., New York, N. Y.

## Presses, Sheet Metal

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Allsteel Press Co., 12015 S. Peoria St., Chicago

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Dale Mfg. Co., Milwaukee, Wis.

## Pulleys, Vacuum Cup

Vacuum Cup Metal Pulley Co., Detroit

## Pumps

Blackmer Pump Co., Grand Rapids, Mich.

Brown & Sharpe Mfg. Co., Providence, R. I.

Galland-Henning Mfg. Co., Milwaukee, Wis.

## Pumps, Coolant

Ruthman Machinery Co., Cincinnati, Ohio

Townkin-Johnson Co., Jackson, Mich.

## Pumps, Lubricant

Ruthman Machinery Co., Cincinnati, Ohio

## Punch, Shear and Bender, Hand

Armstrong Blum Mfg. Co., 341 N. Francisco Ave., Chicago

Buffalo Forge Co., Buffalo, N. Y.

## Punches and Dies

Whitney Mfg. Co., W. A., Rockford, Ill.

## Punches, Hand

Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago

Buffalo Forge Company, Buffalo, N. Y.

Lawthwaite Mfg. Co., T. H., 311 E. 47th St., New York

Whitney Metal Tool Co., Rockford, Ill.

## Punches and Dies

Lawthwaite Mfg. Co., T. H., 311 E. 47th St., New York

## Pusher Tubes

Modern Collet & Machine Co., Ecorse, Mich.

## Pyrometers

Illinois Testing Laboratories, Inc., 150 W. Austin Ave., Chicago

Pyrometer Instrument Co., 102-108 Lafayette St., New York City

## Pyrometers, Optical

Pyrometer Instrument Co., 102-108 Lafayette St., New York City

## Pyrometers, Portable & Stationary

Illinois Testing Laboratories, Inc., 150 W. Austin Ave., Chicago

Pyrometer Inst. Co., 102 Lafayette, N. Y. C.

## Pyrometers, Surface

Illinois Testing Laboratories, 150 W. Austin Ave., Chicago, Ill.

Pyrometer Instrument Co., 102-108 Lafayette St., New York City

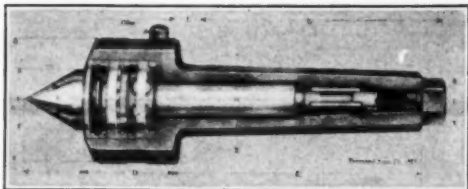
## Racks, Bar Stock

Wm. S. Yrba Supply Co., Canton, O.

## Rivets, Tubular and Split

Chicago Rivet & Machine Co., 1855 S. 54th St., Chicago, Ill.

## **NIELSEN HEAVY DUTY LIVE CENTERS**



Here is a tool especially adapted for unusually heavy work. It is equipped with a combination of precision type roller and ball bearings to assure the rigidity and maximum capacity for high speed production and longest possible service.

Bearings can be renewed if necessary at slight cost. Tests in your machine shop will quickly demonstrate the precision, low maintenance cost and the durability that have established the "Nielsen" reputation. Write for catalog showing our line of improved live centers and tailstock spindles, with adjustments to take up wear and preload the bearings.

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**Lawton, Mich.**

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### **Instantaneous Direct Reading**

The "Anor" Velometer removes guesswork as to air speed, direction, drafts, dead spots in heating, ventilating and air conditioning work in the open or in the duct system. Measures total and static pressure as well as velocities.



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**150 W. Austin Ave.**

**--:**

**Chicago, Illinois**

# Classified Finding Index

**Riveters, Automatic Feed**  
Chicago Rivet & Machine Co., 1855 S. 54th St., Cicero P. O., Chicago, Ill.

**Riveters, Multiple Spindle**  
Grant Mfg. & Mch. Co., Bridgeport, Conn.

**Riveters, Pneumatic**  
Grant Mfg. & Mch. Co., Bridgeport, Conn.

**Riveting Machines**  
Grant Mfg. & Mch. Co., Bridgeport, Conn.  
High Speed Hammer Co., Rochester, N. Y.  
Linley Bros. Co., Bridgeport, Conn.

**Riveting Machines, Tubular and Split**  
Chicago Rivet & Machine Co., 1855 S. 54th St., Cicero P. O., Chicago, Ill.

**Rod Cutters**  
Armstrong-Bloom Mfg. Co., 841 N. Francisco Av., Chicago  
Leuthwaite Mch. Co., T. H., 811 E. 47th, N. Y.

**Router Bits**  
Putnam Tool Co., Detroit, Mich.

**Sanders, Air-Operated**  
Sterling Products Co., Detroit, Mich.

**Sanders, Portable**  
Sterling Products Co., Detroit, Mich.

**Saws, Electric Hand**  
Delta Mfg. Co., Milwaukee, Wis.

**Saw Sharpening Machines**  
Rogers & Co., Samuel C., Buffalo, N. Y.  
Wardwell Manufacturing Co., Cleveland, O.

**Sawing Machines**  
Continental Mch. Co., Minneapolis  
Grob Brothers, Grafton, Wis.  
Wells Mfg. Co., Three Rivers, Mich.

**Scraping Mchs., Hand & Pneumatic**  
Anderson Bros. Mfg. Co., Rockford, Ill.

**Screw Machine Parts**  
Modern Collet & Machine Co., Kearsa, Mich.

**Screw Machine Tools**  
Banner Mfg. Co., 187-1/2 Clybourn Av., Chgo.

**Screw Machines, Automatic**  
Brown & Sharpe Mfg. Co., Providence, R. I.

**Set Screws**  
Triplex Screw Co., Cleveland, Ohio

**Set-Up Appliances**  
Standard Shop Equip. Co., Inc., Phila., Pa.

**Shafts, Flexible**  
E. G. Haskins Co., 4654 W. Fulton, Chicago  
Strand Co., N. A., 5601 N. Lincoln St., Chgo.  
White Dental Mfg. Co., 10 E. 40th Street, New York, N. Y.

**Shafts, Hangers & Boxes**  
Delta Mfg. Co., Milwaukee, Wis.

**Shafts, Steel**  
American Hollow Boring Co., Erie, Pa.

**Shapers**  
Western Mch. Tool Wks., Holland, Mich.

**Shaping Machines**  
Osborne & Sexton Machy. Co., Columbus, O.  
Western Mch. Tool Wks., Holland, Mich.

**Shears, Bevel**  
Marshalltown Mfg. Co., Marshalltown, Ia.

**Shears, Hand**  
Armstrong-Bloom Mfg. Co., 841 N. Francisco Av., Chicago  
Beverly Throatless Shear Co., 3007 W. 110th Place, Chicago, Ill.  
Leuthwaite Machine Co., T. H., 811 E. 47th St., New York  
The National Machine Tool Co., Racine, Wis.  
Whitney Metal Tool Co., Rockford, Ill.

**Shears, Power**  
Buffalo Forge Co., Buffalo, N. Y.  
Dreis & Krump Mfg. Co., 7440 Loomis Blvd., Chicago, Ill.  
Libert Machine Co., Green Bay, Wis.

**Shears, Slitting**  
Beverly Throatless Shear Co., 3007 W. 110th Place, Chicago, Ill.  
Buffalo Forge Co., Buffalo, N. Y.  
Dreis & Krump Mfg. Co., 7440 Loomis Blvd., Chicago, Ill.  
National Machine Tool Co., Racine, Wis.

**Shears, Splitting**  
Marshalltown Mfg. Co., Marshalltown, Ia.

**Shears, Throatless**  
Beverly Throatless Shear Co., 3007 W. 110th Place, Chicago, Ill.  
Marshalltown Mfg. Co., Marshalltown, Ia.

**Sheet Metal Machinery**  
Libert Machine Co., Green Bay, Wis.

**Shop Stools**  
Standard Pressed Steel Co., Jenkintown, Penna.

**Sine Tables**  
Robbins Engineering Co., Detroit, Mich.

**Special Tools and Machinery**  
American Tool Works, Inc., Hartford, Conn.

**Speed Reducers**  
Abart Gear & Mch. Co., 4032 W. 16th St., Cicero, Ill.

**Speed Saws, Universal**  
Wysenbeck & Staff, Inc., 642 Washington Blvd., Chicago

**Spinning Lathes, Metal**  
Oliver Machinery Co., Grand Rapids, Mich.

**Spools & Nuts for Auto. Screw Mchs.**  
Sutton Tool Co., Detroit, Mich.

**Split Rivets**  
Chicago Rivet & Machine Co., 1855 S. 54th St., Cicero P. O., Chicago, Ill.

**Split Rivet Setters, Automatic Feed**  
Chicago Rivet & Machine Co., 1855 S. 54th St., Cicero P. O., Chicago, Ill.

**Spot Welding Machines, Speed**  
Armco Co., Milwaukee, Wis.  
Eisler Engineering Co., Inc., Newark, N. J.  
Interstate Machinery Co., Chicago, Ill.  
Pier Equip. Mfg. Co., Bantam Harbor, Mich.  
Taylor Winfield Corp., Detroit, Mich.

**Sprockets**  
Culman Wheel Co., 1359 Altgeld St., Chgo.

**Stake Riveters**  
Marshalltown Mfg. Co., Marshalltown, Ia.

**Stampings**  
Hamilton Tool Co., Hamilton, Ohio  
Wrought Washer Mfg. Co., Milwaukee, Wis.

**Steel Stamps**  
Colonial Bushings Co., Detroit, Mich.

**Straightening Machines**  
Whitney Metal Tool Co., Rockford, Ill.

**Stripping Units**  
Stripit Corp., Buffalo, N. Y.

**Stud Setters**  
Apex Machine Co., Dayton, O.  
Titan Tool Co., Fairview, Penna.

**Tables, Elevating**  
Midwest Tool & Engineering Co., Dayton, O.

**Tap Extractors**  
Walton Co., Hartford, Conn.





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### Locates Inaccuracies Instantly

When turning tapers on end mills, profile cutters, twist drills, reamers, lathes, etc., accuracy is all important. The Hartford Taper Gauge enables the workman to tell instantly whether a taper is right.

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A good one for Driller,  
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### — DRILL — SPEEDER

OR  
H. S. Drilling  
Attachment

Increases  
the Speed  
3 Times



Send for  
Circulars  
of ALL



Fig. 2

Without Jig  
Attachments

### KNURL HOLDER

for Turret Lathes

Adjustable to any size within capacity.



Swivel  
Lugs

Shank  
to suit Turret

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# Classified Finding Index

## Top Holders

Premier Safety Chuck Co., 14 S. Clinton St., Chicago

## Tapping Machines

Etico Tool Co., Brooklyn, N. Y.  
Rickert-Shaffer Co., Erie, Pa.  
Western Mch. Tool Wks., Holland, Mich.

## Tapping Attachments

Errington Mch. Lab., Staten Island, N. Y.  
Etico Tool Co., Brooklyn, N. Y.  
Premier Safety Chuck Co., 14 S. Clinton St., Chicago, Ill.  
Western Mch. Tool Wks., Holland, Mich.

## Tapping Jigs, Universal

Heuser Mfg. Co., 1638 No. Paulina St., Chicago, Ill.

## Tapping Machines and Attachments

Burke Machine Tool Co., Connecticut, Ohio  
Cleerman Mch. Tool Co., Green Bay, Wis.  
Etico Tool Co., 694 Johnson Av., Brooklyn, N. Y.  
Premier Safety Chuck Co., 14 So. Clinton St., Chicago, Ill.  
Whitney Metal Tool Co., Rockford, Ill.

## Thermometers, Resistance Type

Winnale Testing Laboratories, Inc., 180 West Austin Ave., Chicago, Ill.

## Threading Machines, Automatic

Grant Mfg. & Mch. Co., Bridgeport, Conn.  
Jones & Lamson Mch. Co., Springfield, Vt.  
Rickert-Shaffer Co., Erie, Pa.

## Threading Tools

Armstrong Bros. Tool Co., 308 N. Francisco Ave., Chicago  
Ridge Tool Co., Elyria, Ohio  
Rivett Lathes & Grinders Inc., Brighton, Mass.

## Tool Heads, Universal

Precision Tool Co., Bridgeport, Conn.

## Tool Holders

Armstrong Bros. Tool Co., 308 N. Francisco Ave., Chicago  
Michigan Tool Co., Detroit, Mich.  
Ridge Toolholder Co., Detroit, Mich.  
Western Tool & Mfg. Co., Springfield, O.

## Tool Reclaiming

Machinists Tool Grinding & Mfg. Co., 3058 W. Van Buren, Chicago, Ill.

## Tools

Vinco Tool Co., Detroit, Mich.

## Tools, Abrasive

White Dental Mfg. Co., 10 E. 40th Street, New York, N. Y.

## Tools, Boring

Armstrong Bros. Tool Co., 308 N. Francisco Ave., Chicago  
Gairing Tool Co., Detroit, Mich.

## Tools, Lathe and Planer

Armstrong Bros. Tool Co., 308 N. Francisco Ave., Chicago

## Tools, Machinists'

Armstrong Bros. Tool Co., 308 N. Francisco Ave., Chicago  
Brown & Sharpe Mfg. Co., Providence, R. I.

## Tools, Multi-Diameter

Gairing Tool Co., Detroit, Mich.

## Transfer Punches

McMahon Co., Frank, Dayton, Ohio

## Tube Fittings

Essex Brass Corp., Detroit, Mich.

## Tube Flanging Machines

Grant Mfg. & Mch. Co., Bridgeport, Conn.

## Tubular Rivet Setters, Automatic Fd.

Chicago Rivet & Machine Co., 1855 S. 54th St., Cicero P. O., Chicago, Ill.

## Tungsten Carbide Tools

Michigan Tool Co., Detroit, Mich.

## Turning Tools

Danner Mfg. Co., 1873 Claybourn Av., Cngo.  
R & L Tools, Nicotown, Pa.

## Universal Drill Jigs

Heuser Mfg. Co., 1638 No. Paulina St., Chicago, Ill.

## Universal Joints

American Tool Works, Inc., Hartford, Conn.  
Apex Machine Co., Dayton, O.  
Chicago Gear Works, 769 W. Jackson Blvd., Chicago

## Used and Rebuilt Machinery

Aaron Machinery Co., 176 Lafayette St., New York City  
Alamo Engine Co., Hilldale, Mich.  
Belyea Co., Inc., 150 W. 18th St., New York, N. Y.  
Bonnet-Raffin Corp., 30 Church St., N. Y. N. Y.  
Bernstein & Co., Geo. M., 123 Clinton, Cngo.  
Blaser Mfg. & Mch. Co., Springfield, Ill.  
Bradley Machinery Co., Detroit, Mich.  
Brandt Mch. Sales, Pittsburg, Pa.  
Brown Machinery Co., St. Louis, Mo.  
Brownell Machinery Co., Providence, R. I.  
Burns Mch. Co., F. W., Milwaukee, Wis.  
Cincinnati Mch. & Supply Co., Cincinnati, O.  
Clinton Mch. Co., 32 S. Clinton St., Cngo.  
Dalitz Harry, Cleveland, O.  
Davis Machinery Co., Toledo, Ohio.  
Delta Equipment Co., Philadelphia, Pa.  
Eastern Machinery Co., Cincinnati, O.  
Elyria Helting & Mch. Co., Elyria, O.  
Emerson, Louis E. & Co., 1761 Elston Ave., Chicago, Ill.  
Erie Electric Motor Repair, Inc., Buffalo, N. Y.  
Esley Machinery Co., E. L., 325 Rees St., Chicago, Ill.  
Falk Mill Supply Co., Inc., Rochester, N. Y., Pa.  
Foster Machinery Co., Cleveland, Ohio  
General Blower Co., 401 N. Pearl St., Cngo.  
Ganey Machinery Co., Buffalo, N. Y.  
Globe Mch. Co., 602 W. Lake St., Chicago  
Goldman, Harvey H., Detroit, Mich.  
Hill, Clarke & Co., 645 W. Washington Blvd., Chicago, Ill.  
Hewarth Mch. Co., Inc., C. C., Detroit, Mich.  
Hyman & Sons, Joseph, Philadelphia, Pa.  
Indianapolis Machinery & Supply Company, Indianapolis, Ind.  
Industrial Mch. Co., Indianapolis, Ind.  
International Machinery Co., Detroit, Mich.  
Interstate Mch. Co., 109 S. Clinton, Cngo.  
Iroquois Machinery Co., Buffalo, N. Y.  
Johnson & Sons Machinery Co., Wm. G., St. Louis, Mo.  
Jones Machine Tool Co., Cincinnati, Ohio  
Jones Mch. Co., Royal Oak, Mich.  
Kinsey Co., E. A., Cincinnati, Ohio  
Land J. J., 146 Grand St., New York, N. Y.  
Lang Machinery Co., Pittsburgh, Pa.  
Lucas, J. L., Bridgeport, Conn.  
McDonald Machinery Co., St. Louis  
Machinery Dealers, Inc., New Haven, Conn.  
Merrill-Balbreath Mch. Co., Pittsburgh, Pa.  
Midwest Equipment Co., 625 W. Lake St., Chicago, Ill.  
Miles Machinery Co., Saginaw, W. S., Mich.  
Molter Machinery Co., Charles L., 120 S. Clinton St., Chicago, Ill.  
Morey & Co., 45 Mill St., Astoria, Long Island, N. Y.  
Morton Machinery Co., Cleveland, Ohio  
Norton-Broadway Machinery Co., Cincinnati, Ohio  
O'Brien Machinery Co., Philadelphia  
Ohio Mch. & Supply Co., Cincinnati, Ohio  
Ott Machinery Sales Co., Detroit, Mich.  
Osborne & Sexton Mch. Co., Columbus, O.  
Passman Brothers, 705 Washington Blvd., Chicago, Ill.  
Purton Mch. Co., D. H., Cleveland, Ohio  
Ralliance Machinery Sales Co., Pittsburgh, Pa.  
Roosfeld Mch. Corp., 950 W. Lake, Cngo.

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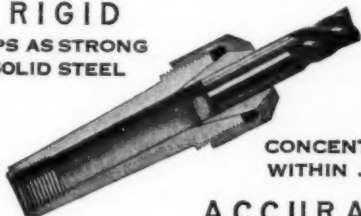
The saws are automatically indexed and sharpened within a variation of plus or minus .001 of exact diameter of entire lot.

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WITHIN .001**

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# Classified Finding Index

## Used and Rebuilt Machinery—Cont.

Breenkrans & Weisbecker, 3300 A. Singer Bldg., New York City  
Scott-Bambsch Mch. Co., 4807 W. 20th St., Chicago  
Sagol Machinery Co., 117 S. Clinton St., Chicago, Ill.

Service Co., Cleveland, Ohio  
Shank Mfg. Co., Bucyrus, O.  
Simmons Machine Tool Corp., Albany, N. Y.  
Standard Machine Co., Baton Rouge, La.  
Standard Mch. Co., Grand Rapids, Mich.  
Strong, Carlisle & Hammond Co., Cleveland, Ohio  
Sun Machinery Co., 28 Van Ruren Street, Newark, N. J.

Surplus Stock & Mch. Co., Inc., 618 W. Lake St., Chicago, Ill.

Tauber Co., Milwaukee, Wis.  
United Mchry. & Supply Co., St. Louis, Mo.  
Victor Machinery Co., 130 S. Clinton Street, Chicago, Ill.

Victor Machinery Exchange 251 Centre St., New York, N. Y.

Vine, R. A., Detroit, Mich.  
Wain Mchry. Sales, Chgo. E., Detroit, Mich.  
Waters Machinery Co., Elkhart, Ind.  
Wertman Machinery Co., Cleveland, Ohio  
West Penn Machinery Co., Pittsburgh, Pa.  
White Mchry. Co., A. D., 108 N. Jefferson St., Chicago

Wizelworth Mch. Co., Cambridge, Mass.  
Winick Machinery Sales, 9 S. Clinton St., Chicago, Ill.

## Vacuum Cleaners, Portable

Brewer Elec. Co., 848 Blackhawk St., Chgo.

## Vacuum Cleaners, Industrial

Brewer Elec. Co., 848 Blackhawk St., Chgo.

## Valves, Air

Ross Operating Valve Co., Detroit, Mich.

## Valves

Galland-Hanning Mfg. Co., Milwaukee, Wis.  
Ross Operating Valve Co., Detroit, Mich.

## Valves, Foot, Lever & Solenoid

Nicholson & Co. W. H., Wilkes-Barre, Pa.  
Ross Operating Valve Co., Detroit, Mich.

## Valves, Operating

Ross Operating Valve Co., Detroit, Mich.  
Tomkins-Johnson Co., Jackson Mich.

## Vises, Combination Drill Table

Modern Machine Tool Co., Jackson, Mich.

## Vises, Drilling Machine

Armstrong-Biem Mfg. Co., 341 N. Francisco Ave., Chicago

Armstrong Bros. Tool Co., 308 N. Francisco Ave., Chicago

Diamond Stephan Mfg. Co., Urbana, O.  
Hueber Mfg. Co., 1638 No. Paulina St., Chicago, Ill.

Graham Manufacturing Co., Providence, R. I.  
L. W. Chuck Co., Toledo, Ohio

Martin Tool & Die Works, J. E., Springfield, O.  
Modern Machine Tool Co., Jackson, Mich.

National Machine Tool Co., Racine, Wis.  
Odin Universal Corp., 110 S. Dearborn, Chgo.

Sheldon Machine Co., 3255 Cottage Grove Ave., Chicago, Ill.

## Vises, Drill

Johnson Tool Co., East Providence, R. I.  
Modern Machine Tool Co., Jackson, Mich.

Plunket Mch. Co., 1823 W. Lake St., Chgo.

## Vises, Machinists'

Chicago Tool & Engr. Co., 3280 So. Chicago Ave., Chicago, Ill.

Diamond Stephan Mfg. Co., Urbana, Ohio  
L. W. Chuck Co., Toledo, Ohio

Odin Universal Corp., 110 S. Dearborn, Chgo.  
Sheldon Machine Co., 3255 Cottage Grove Ave., Chicago, Ill.

Western Tool & Mfg. Co., Springfield, O.

## Vises, Milling Machine

Graham Manufacturing Co., Providence, R. I.  
Hartford Special Mch. Co., Hartford, Conn.

L. W. Chuck Co., Toledo, Ohio  
Odin Universal Corp., 110 S. Dearborn, Chgo.

Plunket Mch. Co., 1823 W. Lake St., Chgo.  
Sheldon Machine Co., 3255 Cottage Grove Ave., Chicago, Ill.

## Vises, Precision

Odin Universal Corp., 110 S. Dearborn, Chgo.

## Vises, Shaper

Graham Manufacturing Co., Providence, R. I.  
L. W. Chuck Co., Toledo, Ohio

Odin Universal Corp., 110 S. Dearborn, Chgo.  
Plunket Mch. Co., 1823 W. Lake St., Chgo.

## Vises, Special

Modern Machine Tool Co., Jackson, Mich.

## Washers

Wrought Washer Co., Milwaukee, Wis.

## Welders, Arc

Hobart Brothers, Troy, Ohio  
Lincoln Electric Co., Cleveland, Ohio

## Welders, Portable

Hobart Brothers, Troy, Ohio  
Universal Power Corp., Cleveland, Ohio

## Welders' Glass

Faulk, F. R., 405 Penn. Av., Pittsburgh, Pa.

## Welding Accessories

The Lincoln Electric Co., Cleveland, O.

## Welding Electrodes and Holders

The Lincoln Electric Co., Cleveland, O.

## Welding Generators, Arc

The Lincoln Electric Co., Cleveland, O.

## Welding Goggles

The Lincoln Electric Co., Cleveland, O.

## Welding Lens, Arc

The Lincoln Electric Co., Cleveland, O.

## Welding Machines, Electric Spot

Armco Co., Milwaukee, Wis.  
Eisler Engineering Co., Inc., Newark, N. J.

Hobart Brothers, Troy, Ohio  
Interstate Machinery Co., Chicago, Ill.

Pier Equipment Co., Boston Harbor, Mich.  
Taylor Winfield Corp., Warren, O.

## Welding Machines and Equipment, E. I. Arc

The Lincoln Electric Co., Cleveland, O.

## Welding Machines, Resistance

Armco Co., Milwaukee, Wis.  
Eisler Engineering Co., Inc., Newark, N. J.

Lincoln Electric Co., Cleveland, Ohio  
Pier Equipmt. Co., Boston Harbor, Mich.

## Wheels, Grinding

Chicago Wheel & Mfg. Co., M. C. Tool Div., 1101 W. Monroe St., Chicago, Ill.

## Woodworking Machinery

Tannewits Works, Grand Rapids, Mich.

## Worm Drives

Michigan Tool Co., Detroit, Mich.

## Worm Gear Motor Units

Star Mch. & Engr. Co., Bloomfield, N. J.

## Wrenches, Reversible

Greene Tweed & Co., 100 Duane St., New York, N. Y.

# GRANT NOISELESS RIVETERS

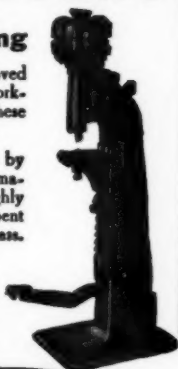
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For 35 years Grant rivet spinners have proved in daily use that the design, strength, workmanship and quality of material of these machines is unsurpassed by other riveters.

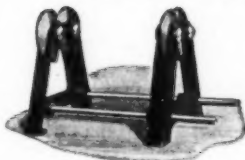
Quality and uniformity of work done by Grant riveters cannot be equalled by any machine of the blow type. Heads have a highly polished appearance. Shanks are never bent or distorted, even when rivets are of soft brass.

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Four Chilled iron discs rotate on sensitive special bearings.

*No Leveling Required*

A simple and excellent device for balancing straightening and truing.

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Swing	Greatest Distance Between Standards	Capacity in lbs.
20 in.	20 in.	1,000
40 in.	30 in.	2,000
60 in.	30 in.	2,000
72 in.	66 in.	5,000
96 in.	88 in.	10,000

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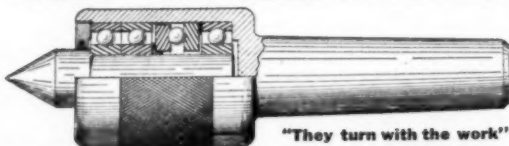
# COMMERCIAL CENTERLESS GRINDING COMPANY

Contract Centerless Grinding  
Accuracy—Prompt Service

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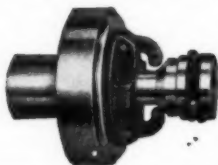


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### DISC TYPE



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Lists of Used and Rebuilt Machinery, either For Sale, Wanted, or For Exchange, set in uniform style, will be published in the Classified Section at the rate of 60 cents a line across the page, each issue, plus \$3.00 for name and address. Minimum charge, \$6.00. No display permitted.

Write directly to those offering the machines for sale, for prices and full descriptions. If what you seek is not advertised, use the enclosed printed form to make known your wants in either new or used machinery and the publisher will gladly pass them along to the advertisers.

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Boring mill, King 32" q. c., m. d.,  
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like new. \$1900.  
Hydraulic accumulator, approx.  
3050 cu. in.

Jig, Wilson babbitt & align.  
Lathe 36"x18" L. & S. arr. m. d.  
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Trip hammer, 150 lb. Champion.  
Valve refacer, B. & D. univ. m. d.

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Bolt threaders, 3 Acme.  
Engraving, mach., Gorton, all sizes.  
Grinder, P. & W. vertical, 14".  
Grinder, plain, cyl., Landis 29x72".  
Lathe, 26x48x23' McCabe, 2 spindle.  
Lathe, 19x12' Sidney, q. c.

Miller, No. 4 Cincinnati, hds., vert.  
Miller, No. 2, Rockford vert.  
Miller, Becker vert., m. d. \$475.  
Pipe machine, 3" Jarecki.  
Shaper, American 16".  
Shaper, slotter, Rhodes, rotary tbl.

### FOR SALE BY

**H. F. Wolnick Machinery Co.,**

**9 So. Clinton St., Chicago, Ill.**

Air compressor, 225 cu. ft., d. c. motor,  
complete.  
Drill, Aurora 24" geared.  
Drill, Kern 4 sudl. No. 2T, tap. att.  
Gear hobbers, Schuchardt & Schutte.  
Grinder, disc, stationary & tilt. tbl.  
Lathe, Hendey 18"x8', t. a., o. p.,

r. a., rebuilt.  
Mill, LeBlond No. 3 plain.  
Mills, Cincinnati B & S. No. 4 pl., spd.  
Screw machines, auto., Gridley and  
Acme.  
Screw machines, W. & S. h. d., Nos.  
3, 4, 6; also Bardons & Oliver.

### FOR SALE BY

**Rosenfeld Machinery Corporation,**

**950 W. Lake St., Chicago, Ill.**

Boring mill, 36" Bullard, m. d.  
Broaching machine, 3B LaPointe.  
Gear hobbers, No. 12 Barber-C., (2).  
Hack saws, Nos. 1 and 2 Marvel.  
Hack saw, Racine 6x6.

Lathe, Rockford 18x8 q. c. g.  
Mill, model c. s., Becker vert. s. p. d.  
Shear, 8' Kuchard foot power.  
Stacking machine, Economy 1900 lb.  
Turret lathes, Potter & J. model 6A.

### FOR SALE BY

**Globe Machinery Company**

**602 W. Lake St., Chicago, Ill.**

Shear, Niagara 8' 16 ga. foot power, with gauges. \$350.  
Air comp. 5x5 Chicago Pneumatic, 7 1/2 h. p., a. c. motor,  
starter and tank. \$250.  
Lathes, Oliver 16x8, q. c., com. 575.  
Bridgeford, h. d. 25"x12", q. c. 785.  
L. & S. 34"x12", q. c. complete 675.  
No. 6 W. & S. 28" opening 585.  
Milling mach. No. 3 Cincinnati 675.  
Shaper, 28" Smith & Mills.

Send us your inquiries.

# USED AND REBUILT MACHINERY

## FOR SALE BY

**Scott-Bansbach Machinery Co., 4607 West 20th St., Chicago, Ill.**

Automatic screw machines, B. & S. Nos. 90, 0, 2.....	\$350 to 1000.
Automatic screw machine, B. & S. No. 19 high speed, cap. $\frac{1}{2}$ " x 14", b. d. ....	350.
Automatic screw machine, B. & S. No. 19 high speed, with motor.....	500.
Automatic screw machine, Cone, 1", 4 spdl., b. d. ....	1250.
Automatic screw machine, Davenport, $\frac{1}{2}$ ", 5 spindle, b. d. ....	750.
Automatic screw machine, Gridley 4 spdl. Model F 24".....	1000.
Automatic screw machine, Gridley, 4 spdl., 14", Model G. and F. ....	600.
Automatic screw mche., Cleveland, $\frac{1}{2}$ " to $\frac{3}{4}$ ", model A and B.....	\$150 to 450.
Automatic screw machine, Cleveland model "B", 2" cap., belt drive.....	300.
Air compressor, Curtis, 8" x 8", capacity 80 to 110 cu. ft. ....	275.
Air compressor, Chicago Pneumatic, 10" x 8", capacity 117 cu. ft. ....	250.
Buffer, 5 H. P. Hill Curtis, rite speed, tex rope drive.....	300.
Broach, Hercules Power, 15 ton, motor drive.....	400.
Drill, New Albany, h. s., motor drive, 110-60-1.....	100.
Drill, Leland Gifford, h. s., b. b. sensitive, $\frac{1}{2}$ " capacity.....	75.
Drill, Demco h. s., b. b., $\frac{1}{2}$ " capacity.....	110.
Drill, 2 spindle Leland-Gifford h. s., b. b., sensitive, $\frac{1}{2}$ " cap.....	150.
Drill, 2 spindle Leland-Gifford h. s., b. b., 14", No. 2 M. T. ....	250.
Drill, 3 spindle Avey, h. s., b. b. bench type on pedestal, $\frac{1}{2}$ " cap.....	200.
Drill, 3 spdl., Leland-G., 24" swing, h. s., b. b., 12" travel, 26" x 54" tbl. ....	500.
Drill, 4 spindle Demco h. s., d. b., 16" swing, $\frac{1}{2}$ " capacity.....	400.
Drill, 6 spindle, Avey, No. 1, H.S.B.B., belt drive.....	600.
Drill, 20" Canedy-Otto, back geared, power feed.....	100.
Drill, No. 24, 24" Foot-Burt, heavy duty with tapping attachment.....	500.
Drill, gang, 3 spindle Barnes, 22" swing b. g., p. f., No. 4, m. t. ....	275.
Drill, 21" Kokomo, hi-speed, sliding head, back geared power feed.....	275.
Drill, 24" Cincinnati-Bickford sliding head, back geared, power feed.....	300.
Drill, 32" Mechanics, sliding head, back geared, power feed.....	350.
Drill radial, 24" Carlton plain, No. 4 Morse taper.....	350.
Drill, radial, 3 ft., Wisconsin, high speed, sensitive, $\frac{1}{2}$ " capacity.....	300.
Filing machine, No. 3 Bary, floor type, belt drive.....	100.
Gasoline engine, 10 h. p. Gray, automatic start.....	125.
Grinder, gear cutter, No. 23 Brown & Sharpe, 8" capacity.....	300.
Gear cutter, B. & S. No. 3, 26" for spur gears.....	300.
Gear hobber, No. 90 Pfauter, cap. 8" x 6" x 10 DP.....	100.
Grinder, 6" x 32" Norton plain motor drive with motor.....	1000.
Grinder, 8" x 20" Fitchburg, takes 17" automatic feeds, b. d. ....	400.
Grinder, 10" x 30", Frager, No. 2, Universal, self contained ctrshft.....	500.
Grinder, surface, No. 2 B. & S. with mag. chuck, cap. 18" x 6" x 94".....	550.
Grinder, surface, No. 2 Diamond, cap. 10" x 24", magnetic chuck, b. d. ....	600.
Grinder, Safety, surface, capacity 16" wide, 50" long, 12" high, belt dr. ....	500.
Grinder, Heald, No. 65, cylinder, 16" spindle and fixture.....	350.
Hammer, No. 14B, High Speed, motor shelf, $\frac{1}{2}$ " capacity.....	100.
Hammer, No. 14B, High Speed motor shelf, $\frac{1}{2}$ " capacity 12" gap.....	125.
Hammer, No. 3-A h. d., $\frac{1}{2}$ " cap. with motor.....	200.
Hammer, No. 4 A, High Speed belt drive, $\frac{1}{2}$ " cap.....	200.
Hammer, No. 5A High Speed, motor shelf, $\frac{1}{2}$ " capacity.....	275.
Hammer, Bradley, 30 lb. compact belt drive.....	200.
Hammer, Bradley, 40 lb. rubber cushioned helve, belt drive.....	325.
Hammer, Bradley, 50 lb., upright strap, belt drive.....	400.
Hammer, Bradley, 60 lb., rubber cushioned strap, belt drive.....	500.
Lathe, Stark bench, 7" x 30" x $\frac{1}{2}$ " cap., c. r., s. r., c. s. and chuck.....	150.
Lathe, 13" x 5' Monarch q. c., s. b. g., 4 jaw chuck taper att. rebuilt.....	300.
Lathe, 13" x 5' Willard, semi q. c., d. b. g.....	200.
Lathe, 13" x 6' South Bend, standard change gears.....	200.
Lathe, 14" x 6' Worcester semi q. c., with 4 jaw chuck.....	each 175.
Lathe, 14" x 6' LeBlond, q. c., D. B. G. 4 jaw chuck, 16" swin.....	350.
Lathe, 15" x 5' South Bend, standard change gears.....	250.
Lathe, 15" x 6' Springfield, q. c., b. g., taper attachment.....	325.
Lathe, 16" x 6' Hendey, q. c., s. b. g., 3 and 4 jaw chucks.....	650.
Lathe, 17" x 8' Cincinnati, semi q. c., d. b. g., with chuck.....	275.
Lathe, 18" x 8' Davis, d. b. g., q. c., heavy duty.....	450.
Lathe, 18" x 8' Walcott, q. c., d. b. g., taper att., 4 jaw chuck.....	650.
Lathe, 20" x 8' Walcott, q. c., d. b. g.....	550.



## USED AND REBUILT MACHINERY

### Scott-Bansbach Machinery Co.—Continued

Lathe, 20"x8' Prentice, plain change with 2 chucks.....	150.
Lathe, 24"x12' Dietz, Schumacher & Boye, plain change, with chuck.....	300.
Lathe, 30"x13' H. S. & G. heavy duty, d. c. d. b. g. 16,000 lbs.....	600.
Lathe, 18"x5' spinning, Grabo, 24" between centers.....	175.
Lathe, 22"x44" spinning gap, Prybil, 40"-76" between centers.....	400.

### FOR SALE BY

<b>Chas. E. Wain Machinery Sales,</b>	<b>7800 Mack Ave., Detroit, Mich.</b>
Grinder, No. 1 Ciu. T&C..... \$ 75.	Reaming mach. Footburt..... 100.
Grinder, 40" Knife..... 190.	Pipe threader, 2" Merrill..... 85.
Grinder, No. 11 B&S..... 225.	Pumps for every service.
Tapper, No. 2 Garvin..... 150.	Collets—many sizes.

### FOR SALE BY

**Joseph Hyman & Sons, - Tioga & Almond Sts., Philadelphia, Pa.**

#### POWER PRESS SPECIALISTS

407A & 405B Bliss toggles, tie rod.	No. 794 Bliss, 16" stroke tie rod.
150 ton E32 Ferracute embossing.	No. D201 Ferracute tie rod.
No. 34B Bliss toggle.	Shuster straight & cut off 1/4"x14'.
No. 205E Toledo, dble. crank, gap.	Hundreds of presses of various types.

### FOR SALE BY

**Davis Machinery Co., St. Clair & Washington Sts., Toledo, Ohio**

Bolt cutter, 1" Landis dbl. hd. lead screws.	Mill, No. 4 LeBlond universal complete, m. d.
Gear hobbers, No. 12 B.-C. double overarm, m. d.	Nibbler, 6" Campbell metal.
Grinder, Capitol internal.	Planer, 36"x36"x8' American, 2 hds.
Grinder, No. 75 Heald internal.	Press, No. 53 Toledo, s. s.
Grinder, Bath, universal, attach.	Radial drill, 3' Rickford, motor dr.
Keyseater, No. 2 Mitts & Merrill.	Screw machine, No. 3 Foster hand.
Lathe, 3"x36" Jones & L. flat turret.	Screw machine, 1 1/2" Gridley model F.
Mill, No. 3 Kemp Smith plain.	Shaper, 20" Ohio crank, b. g.
Mill, No. 2A Garvin univ. compl.	Shear, 205 P.S. & W. circle & flanging.
Mill, model C Becker vertical.	Threaders, 1/4" Geometric.

### FOR SALE BY

**International Machinery Co., 3178 Bellevue Ave., Detroit, Mich.**

Automatic, 3"-1 1/16", 4 sp. Cleveland model M, m. d.	Grinder, 84" Diamond face, m. d.
Automatic, Gridley 4-sp. auto., 1 1/2", model F, multiple spindle.	Grinder, No. 22 Heald Rotary, 14" magnetic chuck, m. d.
Boring mill, 42" Gisholt.	Grinders, No. 11 B&S plain, m. d. (2).
Drill, radial, 34" American, gear box.	Grinder, No. 70A Heald internal, duplex.
Drills, 21", 24", 25" Cincinnati.	Lathes, turret, No. 4, 6, W. & S.
Drill, 32" Reed-Prentice, t. a.	Miller, No. 1 Kent-Owens hand, m. d.
Drills, Hyspeed, 1, 2, 3, 4-spindle.	Miller, 18" Cincinnati automatic.
Drill, No. 242 Barnes Camel Back, m. d.	Miller, 24" Cincinnati duplex, m. d.
Drill, No. 3 Leland-G., single sp., m. d.	Press, No. 36 Niagara, m. d.
Drills, Natco mult., all sizes, hyd. & mech.	Shapers, 16" and 24" G. & E., m. d.
Forming rolls No. H-1220 Yoder, m. d.	Slotter 6" Pratt & Whitney Vertical m. d.
Gear hob. 5-5AC Lees-Bradner m. d.	Squaring shear, No. 196 Niagara, 8' 18 ga.
Gear cutters 4"x36" B. & S. (2).	Thread miller, 6" x 60" Hanson Whitney, m. d.

# USED AND REBUILT MACHINERY

## FOR SALE BY

**Marr-Galbreath Machinery Co.,**

**55 Water St., Pittsburgh, Pa.**

Air compressor, 4½"x4½" Gardner, water-cooled.  
 Air compr., 7x6" Ing.-Rand, ER-1.  
 Air comp., 8x8" Chicago, NSB.  
 Air comp., 10x8" Ing.-Rand, ER-1.  
 Bolt threader, 2½" Landis dbl., m. d.  
 Boring mill, 42" Bullard, 1 swivel and 1 turret head, m. d.  
 Boring mill, N-B-P., fr., 2 columns, 6" bars, with separate milling hd., motors 220-v. d. c.  
 Boring mill, 30" Colburn, turret hd.  
 Boring mill, 30" Bullard VT L, threading attachment.  
 Brake, 4"x10 ga. Robinson, hand.  
 Brake, 7"x18 ga. Robinson, hand.  
 Brake, 8x22 ga. Double Truss hand.  
 Brake lining, punch and riveting machine, m. d.  
 Compr., cent. 75 h.p. G. E., 3/60/220.  
 Crusher, No. 1 Williams Little G., b. d.  
 Die miller, Thurston-Schott, 650 lbs., S. P. D.  
 Die sinker, No. 3 P. & W., r. t.  
 Drill, 24" Aurora, t. a., m. d.  
 Drill, 28" Superior, b. g., power fd.  
 Drill, No. 11-B, Natco, 16-sp., m. d.  
 Drill, rad., 2½" Fosdick & Holloway.  
 Drill, radial, 3" Dreses, tapping att.  
 Drill, radial, 3½" Canedy Otto.  
 Drill Radial, 4" Dreses, gr. box m. d.  
 Forging mch., 1½" Acme; 2½" Ajax.  
 Grinder, 7½ h. p., U. S. dbl. end, 3/60.  
 Grinder, pl. 11 B. & S. 4x30" (cheap).  
 Grinders, univ. tool & cutter, 1 & 1½ Cincinnati.  
 Grinders, univ. Bath 10"x36", mag. chuck 9x31".  
 Grinder Universal, 16"x48" Cic. m. d.  
 Grinder Disc, No. 3 Gardner, 20" wheels, m. d.  
 Grinder, 12"x6" Hendey G. H., T. A., S. P. D.  
 Hack saw, 6x6" and 9x9" Racine.  
 Hammer, power, 50 lb. Boss, b. d.  
 Hammer, power, 50 lb. Little Giant.  
 Hammer, 100 lb. Mayer, power.  
 Hammer, 200 lb. Beaudry, power.  
 Hammer, 400 lb. Bliss board drop, b. d.  
 Hammer, 800 lb. Erie SF steam or air.  
 Hammer, 1000 lb. Chamber's gt. drop.  
 Hammer, atm. drop, 1500 lb. (nr. new).  
 Hammer, Syntro ELEC., 1/40/110/.  
 Hoist, chain, 4-ton triplex, Y. & T.  
 Jointer, bench, 4" Wallace, m. d.  
 Keyseater, No. 2 Catlin, cap. 2"x15".  
 Keyseater, No. 3 Mitts & M., belt.  
 Lathes, 9"x3"; 10"x4", plain change.  
 Lathes, 16"x7" National, q. c. g., (3).  
 Lathe, 20"x10" Johnson q. c. g., t. a., chuck.  
 Lathe, 22"x12" Rahn-Larmon, q. c. g.  
 Lathe, 24"x8" L. & S., q. c. g., d. b. g., chuck.

Lathe, 26"x14" Draper, plain change gear, chuck and c. / s.  
 Lathes, 42"x30" Bridge'd g. h., m. d.  
 Lathe, turret, No. 4 W. & S., bar feed, m. d., g. f. h. (2).  
 Miller, bench, No. 1 P. & W., hand. (like new).  
 Miller, No. 2 Brown & S. pl. cone.  
 Miller, pl., No. 15 Garvin, 42x10x21".  
 Miller, No. 4 Ohio, table 101".  
 Pipe cutter, 3" Murchey, motor 3/60/440 v.  
 Pipe machine, 2" Robbins, bench, motor 1/60.  
 Pipe machine, 12" Cox., b. d.  
 Pipe machine, 12" E. C. & B., s. p. d.  
 Pipe machine, 18" Wieladn, m. d.  
 Planer, 16"x16"x4" P. & W., 1-head.  
 Planer, Gray, 56x48x10", 4 heads.  
 Polishing stand, 3 H. P. U. S., 3/60/220.  
 Press, No. 78½ Bliss T. R., 10" str.  
 Press, Farrell D. C. bed 34x36" wgt. 13,700 lbs.  
 Press, P-3 Ferracute m. d. (3).  
 Press or shear, United ob, 3½" shaft, m. d. (2).  
 Press, Horn., No. 160 Stoll, 2½" str. 1450 lbs.  
 Press, 30-ton Lourie hydraulic.  
 Pump, tripl., 14"x4" Worthington, b. d.  
 Punch, triple combination Pels 16, m. d.  
 Punch & shear, 25x24 U. Buffalo.  
 Punch & shear, s. e., 4"x4", 18" thrt.  
 Punch and shear, No. 3 L. & A., ½"x½", 14" throat.  
 Punch and shear, No. 12 Badger combined, b. d.  
 Punch, & sh. hand, No. 3B. Beloit 5/16"x½".  
 Punch, s. e. rapid, No. 000 H. & J., 16" throat.  
 Riveter, 4-A, high spd., belt, or m. d.  
 Riveters, Shus'er, ½" & 3/16", belted.  
 Riveter, No. 120 Grant, cap. ½", m. d.  
 Saw, No. 10 Racine 9x9", belted.  
 Saw, cold, No. 7 Espen-L., 15" belt.  
 Saw, cold, No. 1 Newton, 4½" belt.  
 Saw, hack, No. 4 Marvel, m. d.  
 Saw, No. 1 Marvel hack, 4"x4", b. d.  
 Saw, 6"x6" Racine hack, gear box, belt drive.  
 Shaper, 24" American b. g. crk., b. d.  
 Shapers, 16", 20" & 24", G & E, cone.  
 Shaper, 24" G. & E. hi-duty, motor 220-volt, d. c.  
 Shaper, 15" Springfield, sbg: belt.  
 Shaper, 15" Blount, friction type.  
 Shapers, 14" Hendey, for m. d.  
 Shaper, 20" G. & E. b. g., m. d.  
 Shaper, 21" Smith & Mills.  
 Shaper, 24" Barker b. g. V-ram, b. d.  
 Shaper, 25" Hendey friction vise.  
 Shear, angle, 6x6x½" Kling., m. d.

## USED AND REBUILT MACHINERY

### Marr-Galbreath Machinery Co. - Continued

Shear, throatless 18-M Marshall-town, motor drive.  
Shear, bar 3" United, 24" blade, m. d.  
Steam turbines, 100 h. p. 900 rev (2).  
Straightener, 3" x 20" Shuster, cut-off.  
Turret lathe, 18" x 31" Libby, m. d.

Valve refacer, Kwik-Way, cabinet base, m. d.  
Welder, Arc 300 amp. 3/60/220.  
Welders, arc, 35 amp., transformer.  
Welding & cutting generator, Carbic  
Wheel press, 60 ton 34" x 81", b. d.

Partial List. Get Our New Complete Stock List.

### FOR SALE BY

#### Shunk Manufacturing Company • Auto Ave. • Bucyrus, Ohio

Brinell test. mch., Steel City, style A  
Butt welder, Toledo, cap. 1 1/2" round.  
Cylinder bor. mch. Beaman & S hor.  
Drill press, Moline hoie hog. 4 spdl.  
Gas engine Miller, 85 h. p., 3 cyl.  
Milling machines, Beaman & Smith,  
continuous (2).

Motor generator set, Lincoln, synch.  
Lathe, engine, Reid.  
Planer, Gleason No. 2, 38" bet. col.  
Pumps, blowers and fans, water and  
air cooled engines.  
Screw machine, Clev. aut. model A.  
Steam engine, Skinner, 125 h. p.

### FOR SALE BY

#### Service Co., • • • 3732 Cedar Ave., Cleveland, Ohio

##### WELDERS

Dual Arc 200 amp. with Continental  
engine (1).  
Rebuilt 200-amp. Westinghouse A.C.  
stationary (3).  
General Electric 200-amp. A.C. (2).  
General Electric 400-amp. A.C. (3).  
U. S. L. 200-amp. A.C. (1).  
Lincoln 200 ampere with 6 cylinder  
Packard engine (1).

Lincoln 300-amp., gas engine dr. (2).  
Lincoln 200-amp., gas engine dr. (3).  
Lincoln 400-amp., gas engine dr. (6).  
Lincoln 300-amp. A.C., D.C. (2).  
Transformer type A.C. welders,  
220-440 volt (7).  
Westinghouse 200 amp. with Con-  
tinental engine (1).

We rebuild, buy and sell welders.

### FOR SALE BY

#### Brown Machinery Co., • • • 2333 N. 9th St., St. Louis, Mo.

Brake, Chicago Steel, 8' 18 gauge.  
Drills, 14, 16, 20, 22, 24 & 42"  
Drill, rail. Foote-Burt.  
Drills, 16 & 20 spindle Natco.  
Gear hobbors, G. & E. 12".  
Grinders, cylinder, Madison, No. 65  
Heald.  
Grinders, cylindrical, 12" x 42" and  
10" x 30" Landis, 14 x 72" Norton  
Grinders, disc. No. 6-20 Besly; No.  
220 Badger automatic.  
Hammers vert. 40 & 80 lb. Perfect.  
Lathes, 26" x 12" Putnam, taper att.;  
18" x 81" Ruhn-Mayer; 18" x 8" L. &  
S., pat. head; 16" x 6" Bradford.  
Millers, plain. No. 3 Kemp Smith;  
No. 2-B Milwaukee; 3 1/2 Fox;  
3-B Owen.  
Millers, universal. No. 2 Hendey-  
Norton; Lincoln type, No. 4  
Hendey; slab, Briggs type No. 11.  
Presses, toggle, Nos. 167, 168 Tol.

Planer, 26" x 26" x 6' Whitcomb.  
Presses, toggle, Nos. 167, 168 Tol.  
Presses, straight side, No. 73 Swaine;  
No. 7 Zeh & Hahemann, S. S.;  
SG81 Ferracute, grd., dbl. No. 35  
Niagara.  
Presses, o. b. i. Nos. 1, 2, 3, 4  
Loshbough-Jordan; V & O No. 01.  
Punches, sgl. end, Cleveland "C"  
26" thr. 1/2 in 1/2"; Rock River Style  
L rapid action, 24" thr. 1/2 in 1/2".  
Punch & shears, dble. end, No. L-10  
Badger 10" thr. 1/2 in 1/2".  
Riveters, No. 5A High Speed 1/2" cap.;  
Grant 1/2" 18" throat, M. D.  
Saw, cold, Higley No. 14.  
Screw machines, No. 2 1/2 P. & W.;  
1 x 15" P. & W.  
Shapers, 16" Barker.  
Shear, rotary bevel, 1/2" Lennox.  
Shear, squaring, 10' Stark.  
Welder, butt, Federal, 25 cy., 440 v.

# USED AND REBUILT MACHINERY

## FOR SALE BY

### Ott Machinery Sales, Inc.,

Automatics, B. & S. Nos. 00, 0, Cleveland Model A 1, 12, 24, & 48; Fay 14"x19"; Acme Nos. 53, 54, 55, and 76; Gridley 4 spdl. 1", 1 1/2", 1 3/4" & 2 1/4". Boring mills, Bullard 52" 2 swivel heads. Drills, h. s., b. b. Henry & Wright No. 2, 2, 4 and 6 spindle. Drill, rad. Bickford 5'; Dresses 6'. Gear shapers, Fellows Nos. 6. Gear generators, Gleason 15" spiral bevel; roughers and finishers; Barber-Colman No. 3 and 12; Lees Bradner No. 1. Grinders, Brown & S. No. 11, s. p. d. B. & S. Nos. 14 & 16 pl., m. d., No. 2 B. & S., surface; B. & S. Univ., No. 3; Heald No. 55, 60.

Many more good tools.: Your inquiries solicited.

### 548 Second Ave., Detroit, Mich.

65, 70, & 75; Landis 10x36 plain a. c., m. d.; American 14" x 6" G.H.T.A. Lathes, Hamilton G.H. 14"x6"; Hendey 18"x10" taper attachment 18"x8" Springfield, t. a. Lathes, turret, J. & L. 2"x24" and 3"x36"; Warner & Swasey Nos. 2, 4 and 6, Steinle 24" 6 1/2" hole. Milling mchs., H. & S. No. 2 univ. Kemp Smith Nos. 12 & 33 Mfg.; Model B Becker vertical. Presses, Ferracute Pl, 2 and 3, and D G 53; assorted o. b. i., s. s. single and double crank, also toggle Metalwood 30 ton hyd. Elmes Hydraulic 300 ton. Shaper, 20" & 24" Steptoe V Ram, m. d.

## FOR SALE BY

### Balyea Company, Inc.,

#### D. C. MOTORS Adj. Speed—230 Volt

H. P.	MAKE	TYPE	SPEED
1-600	West.		400/600
1-400	G. E.	MPC	160/300
2-300	G. E.	MPC	300/600
1-125	G. E.	DMC	150/300
1-125	West.	SK-210	225/900
8-120	G. E.	DMC	300/750
2-80	Diehl	K11-40	550/1100
1-75	G. E.	CD	575/870
1-60	West.	SK	107/160
2-60	El. Dy.	25S	450/1200
5-60	El. Dy.	25S	525/1050
2-50	West	SK-190	225/600
1-50	West.	SK-160	600/1200
12-40/50	Cr. Wh.	EM	175/700
1-40	West.		300/900
2-35	West.	SK	500/1500
1-30	El. Dy BB.	10-S	800/1600
12-20	G. E.	LC	650/1950
2-7 1/2	G. E.	RF-10A	450/1800
12-7 1/2	West.	SK-80L	400/1600
12-7 1/2	West.	SK-70L	800/1500
14-5	West.	SK-70L	400/1600
10-3 1/2	West	SK-40	450/1800

#### MOTOR GEN. SETS.

3-1250/1500 k. w. Westinghouse, 3 unit M. G. sets consisting of: 2-625/750 k. w. DC Gen. 125 v., 600 RPM coupled on each end of: 1-1930 k. v. a. synch. motor, 2300 v. 600 rpm. 3 ph., 60 cy. 1-22 1/2 k. w. type SK, 125 v., 600 rpm. exciter. 1-1000 k. w., G. E. type M. P. C., D. C. Gen. 250 v., conn. to 1400 h. p. type ATI, synch. motor, 6600/2300 v., 514 r.p.m. 3 ph., 60cy.

### 150 W. 18th St., New York, N. Y.

250 KW G. E. 3 unit Synch. Motor Gen. Set consisting of 2 125 KW Interpole, DC, 125 V. generators coupled on each end of 1-390 HP Synch. Motor, 4600 V., 3 Ph., 25 Cy., 750 RPM. 3-250 KW G. E. DC Gen., 250 v. conn. to Synch. Motor, Type ATI, 2300 V., 720 RPM. 3 ph., 60 cy.

#### A. C. MOTORS—60 CYCLES

H.P.	TYPE	VOLTS	SPEED
1500	G. E., ATI	440/220	180
500	G. E.	440	1200
450	West.	440/220	257
375	G. E., ATI	600	2300
350	Cr. Wh.,	720-2300/440	
225	E. Mch. 3 Brg	2300/4150	450
220	G. E., ATI	2300	900

#### SLIP RING TYPE

450	West. CW	2200	875/700
400	West. CW 1416	2200	290
400	G. E. MT424	4150/2300	390
400	West. CW	2200	514
300	Al. Ch ANV	2200	585
300	West CW	1800	440/220
250	G. E. MT-424Y	4000/2300	257
250	F. Morse RV	2200	1200
250	West. CW	440/220	585
225	G. E.	440/220	1800
200	West CW	440/220	575
200	West CW	2200/550	870

#### SQUIRREL CAGE TYPE

1-250	West. CS	2300/440	580
1-200	G. E., IK	550	600
1-200	West. CS 876A	220/440	1160
1-100	G. E. IK 15	440/220	720
1-100	West. Vert. CS	440/220	1200

# USED AND REBUILT MACHINERY

## FOR SALE BY

West Penn Machinery Company

1210 House Building,

Pittsburgh, Pa.

Air compressors, 30 to 2500 cu. ft.  
 Beader, Yoder, 12 ga. m. d.  
 Blower, No. 4 Roots, cap. 2110 c.f.m.  
 Bolt cutter, Acme 2", belt drive.  
 Bor. mills, 24" Bullard New Era.  
 Boring mill, 14", b. d.  
 Boring mill, 60" Colburn, 2 hds., spd.  
 Boring mill, 62" Betts, 2 heads, b. d.  
 Bor. mill, hor. 5" bar Barrett, m. d.  
 Brake, 7 x 10 ga. D. & K. m. d.  
 Brakes, 3' x 3' 16" Chicago, m. d.  
 Bulldozers, Nos. 2, 4, 6, 9, 23, & 30.  
 Crane, 7½ ton Morgan, 65', 220v. D.C.  
 Cranes, Electric Traveling.  
 Crane, crawler, gas., No. 2 No'wes.  
 Draw bench 20000 lb. W-F.  
 Drill, radial, 4' Prentice, t. a., b. d.  
 Drill, rad. 5' Cincinnati-Bick., m. d.  
 Drill, radial, 5' American, s. p. d.  
 Drill, rad. 6' Reed-Prentice, s. p. d.  
 Drill, mult. 24 sp. No. 30 Natco.  
 Drills, upright 10" to 36".  
 Drill, press, 6 spindle Allen.  
 Engine, gas, 20 h. p. Bessemer.  
 Flanger, McCabe, ½" capacity, dies.  
 Gear cutters, 11", 18" & 24" Gleason.  
 Gear tester, bevel 18" Gleason.  
 Grinder, roll, Farrell 28"x64".  
 Grinder, d. e. 2 h. p. 270/440/3/60.  
 Grinder, disc, No. 8-20" Besly, b. d.  
 Grinder, 12x24" Landis univ.  
 Grinder, sheet, Mattison.  
 Grinder, D.E., 3HP. 220/3/60.  
 Grinder, surface 8" Heald.  
 Grinder, sur. 14" Pratt & W., m. d.  
 Grinder, surf. Diamond, table 48x16".  
 Grinder, int. No. 60 Heald, b. d.  
 Hammer, 100 lb. Little Giant.  
 Hammer, Blacker, power, 35-lbs.  
 Hammer, Brad. 500 lb. upright.  
 Hammer, power, 90-lb. Justice, b. d.  
 Hammer, pwr., 100 lb. Brad. cush.  
 Hammers, Nos. 2-B, 3-B, 4-B, Nazel.  
 Hammers, steam, 600 lb. to 6000 lb.  
 Hammer, stm. dr., 1500 to 10000 lb.  
 Hoggling machine No. 3 C. M&M.  
 Lathe, 11"x5" Meyers, p. c. g., b. d.  
 Lathe, 14"x6" Prentice grd. hd.  
 Lathe, S-B 18x5", b. d.  
 Lathe, 18"x8", L. & S., b. d.  
 Lathe, 20"x10", Draper, b. d.  
 Lathe, 22"x12" R-L q. c. g., d. b. g.  
 Lathe, 24"x12" L. & S. b. d.  
 Lathe, 24"x15" Prentice, grd. hd.  
 Lathe, 42"x16" S. B. q. c. g., b. d.  
 Lathe, 42"x30" Bdgfd. grd. hd.  
 Lathe, 60"x16" Putnam, b. d.  
 Lathe, spinning 32" b. d.  
 Lathe, roll, 18"x14".  
 Lathes, turret, No. 4 W & S. b. d.  
 Miller, vert. No. 6 Becker, m. d.  
 Miller, B. & S. Universal No. 4 b. d.  
 Motors, a. c. & d. c.

Nut tapper 8 sp. 1" National.  
 Pickler, 4 arm Mesta, 10' radius.  
 Pipe machine 2" Landis b. d.  
 Pipe mches., 6" Williams.  
 Planer, 42x42"x12" Cinc., 3 hds., b. d.  
 Press, No. 20C Bliss, OBI.  
 Press, No. 8 L. & J. OBI.  
 Press, No. 3 Bliss, Stiles type.  
 Press, cam, No. 69N Bliss, dbl act. inc.  
 Press, horn., No. 43 Toledo 14" str.  
 Press, No. 93-B Toledo, b. d.  
 Press, hyd. 100-ton Southwark.  
 Press, No. 55 Toledo, bed 20x19.  
 Press, No. 57 Toledo, 32"x32", str. 6".  
 Presses, hyd. 200-ton Oilgear.  
 Press, dbl. crank No. 5 Bliss, 2" str.  
 Press, o. b. l., Nos. 18, 19, 20 Bliss.  
 Press, screw, No. 87 Niagara.  
 Press, wheel, hyd., 300 ton Niles.  
 Press, 6 spindle, W-F.  
 Punch, beam, No. 5, H. & J.  
 Punch, Rock River, 4"x4".  
 Punch, EF Cleveland, 36" thrt., 14"-1"  
 Pumps, Cent. 6", 4", 1", m. d.  
 Riveters, air, hammer, spinning.  
 Rolling mill, cold 9"x18".  
 Saws, frict on, Nos. 2, 3 & 4 Ryerson  
 Saw, cold, 48" Newton.  
 Saw, hack, Peerless, 4x44".  
 Saw, hack, Racine 6x6.  
 Saw, hack, Racine, 12x12.  
 Saw, hack, Peerless, 13"x18", m. d.  
 Scale, sheet bundling, 2500 lbs.  
 Shaper, 32" Cincinnati, b. d.  
 Shapers, 16", 20", 24" & 36" L. & E.  
 Shear, circle No. 3 Bliss, 40"x20 ga.  
 Shear, circle, Niagara, 4" cutters.  
 Shears, alligator, 14", 2", 3", 4" & 6".  
 Shear, angle 6x6x½", Cleveland.  
 Shear, bar 1½", New Doty.  
 Shear, beam, 24" Cleveland.  
 Shear, bevel, Lennox ½", b. d.  
 Shear, comb. 24-U-Buffalo.  
 Shear, sq. 11"x10 ga. Niagara, m. d.  
 Shear, plate, 60"x1½" Pels.  
 Shear, plate 66"x1½" H. & J.  
 Shear, 120"x1½", Lewis, m. d.  
 Shear, 156"x1½", Lewis, m. d.  
 Straight'r, 48" Aetna-Stid 17 roll 3½".  
 Shear, rotary 24" thrt. cap. ½", m. d.  
 Shear, Streine 10'-16 ga.  
 Shear, Buffalo all steel 3" sq., m. d.  
 Slotters, 6" Newton, 8" & 21" Betts.  
 Slotter, 24" Newton, motor drive.  
 Straightener, 42" Aetna std. 17 roll 3½".  
 Straightener, shape, Sutton No. 2.  
 Straightener, Shuster, 12"x1½".  
 Straightener, 1½", 4" rd. Abramson.  
 Tumbling barrel, 34"x45", b. d.  
 Upsetters, 1" to 6".  
 Welder, 40 kw. Thom. 2 pcs. 1".  
 Welder, butt 1½" Winfield.

## USED AND REBUILT MACHINERY

### FOR SALE BY

**E. L. Klauber Machinery Co.,** 320-322 South Third St., St. Louis  
Centering machine, revol. head.  
Cyanide furnaces, No. 22 Stewart.  
Filing machines, bench and floor.  
Lathes, 12" 14" 18".  
Hardening furnaces, No. 28 Stewart.

Miller, Newton horizontal 16"x55".  
Presses, No. 3&4 Crosby open back.  
Saw, Racine 6x6 high speed, belt.  
Screw machines, No. 2 Warner & S.  
Shapers, 16"-20" Ohio sgl. pulley dr.

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### FOR SALE BY

**General Blower Co.,** - - - 401 N. Peoria St., Chicago, Ill.

#### BLOWERS—FANS—EXHAUSTERS.

For Dust Collecting — Ventilating.  
Oil and gas burners, cupolas, furnaces, etc.  
Roots—Connersville and centrifugal blowers.  
What are your blower requirements?

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### FOR SALE BY

**Failor-Strafer Machinery Co.,** - 136 Liberty St., New York  
Bar shear, 6" sq.  
Boring mill, 54" Colburn.  
Conveyor and chain, 360', 4" links.  
Grinder, No. 14 P. & W. surface b.b.  
Grinder, 30"x96" Landis m. d.  
Hammer, 1200 lb. Chambersburg b.d.

Lathe, 3"x36" J. & L. bar & chuck'g.  
Motor, 150 h. p. 900 rpm. 440-60-3.  
Multi. punch No 5 H. & J. 7' 8".  
Press, forging 1000 ton Mesta S-H.  
Planer, Cin. 30"x20' 4H box table.  
Sq. shear, 8"x14 ga. Geo. Ohl.

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### FOR SALE BY

**United Machinery & Supply Co.,** 1241 Walton Ave., St. Louis, Mo.  
Brake, 5' D. & K. box and pan.  
Brake, 10' 10 ga. D. & K., a.c., m.d.  
Brake, D. & K. 8'x18 ga.  
Grinder, No. 13 B. & S. universal.  
Hammer, 50 lb. Beaudry.

Press, No. 37 Excelsior, 54" wide.  
Presses, Toledo No. 167 & 168 toggle drawing 50,000 lbs.  
Punch, horizontal, H & J. 14". 4".  
Rolls, corrugating, 6' Bertsch.

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### FOR SALE BY

**Harry Dalitz,** - - - 701 E. 96th St., Cleveland, Ohio  
Automatic screw machines, Model B Cleveland,  $\frac{1}{2}$ " to  $\frac{3}{4}$ " (3).  
Automatic screw machines, Model B Cleveland,  $\frac{1}{2}$ " to  $\frac{3}{4}$ " (2).  
(Above machines single spindle, used only about 30 hours.)  
Gear cutting mills, automatic, cut gears from  $\frac{1}{4}$ " to 3" (7).  
Lathe, turret, No. 4 Warner & Swasey; Pratt & Whitney.  
Lathe, 16" Fulton metal turning, blocked up for 24".  
Many other buys in high grade used machine tools.

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### FOR SALE BY

**D. H. Prutton Mchy. Co.,** 5295 W. 130th St., Cleveland, Ohio  
Automatic, Cleveland  $\frac{1}{2}$ " model A.  
Automatic, Cleveland 24" model A.  
Chucker,  $\frac{1}{2}$ " Cleveland model M automatic.  
Drills,  $\frac{1}{2}$ " cap. Demco 4 spindle, power feed, b. b. (3).  
Gear hobbers, No. 0 and No. 1.

Schuchardt & Schutte.  
Grinder, disc, No. 120 Gardner.  
Pointers and threaders,  $\frac{1}{2}$ " Economy automatic. (4).  
Press, No. 106 Bliss.  
Press, cam drawing, No. 1 Bliss.  
Presses, No. 4 & 5 Zeh & H. incl.

## USED AND REBUILT MACHINERY

### FOR SALE BY

#### The O'Brien Machinery Co.,

113 N. Third St., Philadelphia, Pa.

Band saw, 42" American, V belt, m. d.  
Boring mill, 24" Bullard New Era.  
Boring mill, 100" N.B.P. mtr. dr.  
103" swing, 82" under rail, rapid  
traverse.  
Boring mill, 24" Bullard, rap. prod.,  
threading attachment.  
Boring mill, 36" Bridgeport.  
Crane, 36' Gantry, 20 ton, hand oper.  
Drill, 6' Mueller radial, mtr. dr.  
Drill, D2 Colburn, 3" cap.  
Grinder, No. 103 Rivett, internal  
hole cap. 1/64" to 2".  
Grinder, 12"x24" Modern cylindrical.  
Hammer, 800 lb. Erie, steam forging.  
Hammer, 1100 lb. NBP. steam forg.  
Hammer, 2000 lb. Chambersburg  
double frame steam.

Lathe, 19"x8' Sidney, heavy duty,  
belt dr. quick change.  
Lathe, 30x24 New Haven, belt.  
Miller, No. 3 LeBlond plain, belt  
drive, table 12"x60", quick chge.  
Miller, No. 2 Kemp Smith, plain,  
table 10"x45", belt drive.  
Miller, No. 5 Cincinnati plain, table  
76"x19", s. p. drive.  
Miller, Model D, Becker vertical  
table 96"x20".  
Pipe machines, 2, 4, 6, 8 and 12"  
belt and motor drive.  
Punch, No. 3 Royersford, double  
end, 12" throat, cap. 1 1/4"x1 1/2".  
Shapers, 14, 16, 20 & 24" various makes  
Turret, No. 1B Foster, S. P. drive.  
2" capacity.

### FOR SALE BY

#### Lang Machinery Company, 28th St. & A. V. R. R. Pittsburgh, Pa.

Air compr., 12"x10" Chgo. "nsb" m. d.  
Automatics (4) No. 5-A Potter & J.  
Blower, No. 5 Sturtevant, 8 1/2" dis. b. d.  
Bor. mill, 24" Bullard, r. p., b. d.  
Bor. mill, 30" Bullard, thrd. att., spd.  
Bor. mill, 42" Gisholt, r. p. t., s. p. d.  
Bor. mill, 54" Bullard, 2 hds. r. p. t.  
Bor. Mill, 76" Bullard, 2 Hds. m. d.  
Bor. mill, 84" Sellers, 2 hds. b. d.  
Bor. mill, 10'-16" Betts, 2 hds. b. d.  
Boring mill, hor. 3" Rockford, tbl.  
Bolt cutter, 1" Landis, sgl. hd., b. d.  
Bolt cutter, 1 1/2" Acme, sgl. hd., b. d.  
Broach, No. 3 LaPointe, m. d.  
Buffer, Marschke dbl. end, 220/3/60.  
Drill, No. 124" Baker, cap. 2 1/2".  
Drill, rad. 2" Fostick, t. a., b. d.  
Drill, radial, 2 1/2" Fostick, s. p. d.  
Drill, rad. 3" Bickford, t. a., b. d.  
Drill, radial (2) 3" Cincinnati-Bick.  
Drills, upright, 14" to 32".  
Drill, sens. 3 sp. Reed, b. d.  
Drill, 4 sp. No. 2 Foote-Burt, m. d.  
Drill, 16-spdl. No. 12 Pratt & W.  
Gear millers, No. 1 Bilton, b. d., (2).  
Gear miller, Standard, 4 1/2"x4 1/2", b. d.  
Grinders, single and double end.  
Grinder, disc, dbl., 18" Diamond, b. d.  
Grinder, plain, cyl. 10"x50" Norton.  
Grinder, disc, No. 4 Gardner, 22" m. d.  
Hammer, 100 lb. Bradley, cush. hel.  
Hammer, forg. 5000-lb. Niles-B-P.  
Hammers, st. drop 2000-6000 lb. Erie.  
Keyseater, No. 4 Mitts & M. b. d.  
Lathe, 14"x6" Carroll, q. c. g., b. d.  
Lathe, 16"x6" American q. c. g., b. d.  
Lathe, 16"x12" Lodge & S. t. a., b. d.  
Lathe, 20"x8" Lodge & Shipley, b. d.  
Lathe, 24"x10" Bradford, p. c. g., b. d.  
Lathe, 26"x12" Bridgeford, q. c. g., b. d.

Lathe, 30"x14" L. & S. q. c. g., m. d.  
Lathe, 36"x12" Bridg. grd. hd., q. c. g.  
Lathe, 38"x14" Boye & E. q. c. g., b. d.  
Lathes, brass 18"x6" Amer. b. d., (2).  
Lathes, tur. No. 4 W. & S., b. d.  
Lineshafting - pulleys - hangers.  
Miller, plain, No. 2 LeBlond, b. d.  
Miller, plain No. 28 Ohio, table  
11 1/2"x52", b. d.  
Miller, plain No. 4 LeBlond, table  
71"x16" b. d.  
Miller, No. 24 B. & S. tbl. 17"x72".  
Miller, univ. No. 2-B Hendey-Nort.  
Miller, slab, 26"x26"x12" Ing. adj. r.  
Millers, vert Nos. 4-B, 5-C & 6-Becker.  
Planer, 42"x42"x10" Cincinnati, m. d.  
Planer, 42"x56"x10" Cin., 4 hds. m. d.  
Planer, 60"x48"x14" N.-B.-P. 3 hds. b. d.  
Press, No. 1-C standard, pedestal.  
Press, embossing, 500-ton Am. b. d.  
Press, No. 75 Toledo, open back 2" str.  
Press, No. 57 Toledo, 6" stroke.  
Punch, No. 5 H. & J. 62" th. 1 1/2"x1 1/2".  
Saw, shaping, 13"x13" Peerless m. d.  
Shaper, 28" Queen City, b. g., b. d.  
Shaper, 24" Cincinnati, b. g., b. d.  
Shaper, 26" Smith & Mills, b. d.  
Shaper, 20" Cincinnati, b. g., b. d.  
Shaper, 20" Steptoe, s. g., b. d.  
Shear, Power, 36"x3" United, b. d.  
Shear, plate, 10"x3/16" Niagara, m. d.  
Shear, rotary No. 5-A Quickwork,  
60"x1 1/2".  
Shear, sq. 10"x1 1/2" Lewis, m. d.  
Shear, sq. 186"x1 1/2" Lewis, m. d.  
Tapping machine, 10" Baker, s. p. d.  
Thread miller, No. 6 Lees-B. s. p. d.  
Wiring & edging mch. No. 2 Magee.  
Welders, arc, 200-300 amp. Lincoln.  
Unishear, No. 0 36"x16 ga., m. d.

## USED AND REBUILT MACHINERY

### FOR SALE BY

#### Elyria Belting & Machinery Co.,

Crane, 10-ton Cleveland 44' span, with 3-ton auxiliary hoist, cab drive, 22 h. p. a. c. motors.  
Drill press, Natco No. 11, arranged for 12 spindles.

#### Elyria, Ohio

Elect. oven, Westinghouse 8' x 7' x 6' 8" 30 k. w. type M, size 107.  
Grinder, centerless, Heim No. 162.  
Header, or upsetter, National, 3 1/2", steel frame.

### FOR SALE BY

#### Foster Machinery Co.,

#### 3982 Bluestone Rd.

#### Cleveland O.

Air compressor, 6" x 6" Bury, tank and gauges.  
Bolt cutter, 1 1/2" Acme Class "A" with USS & SAE dies.  
Draw bench, 10,000 Pull 12' draw.

Drill, multi, No. 2 Bausch, cap. 24 drills, head 17" x 32".  
Hoist, 1/2 ton electric, 30' lift.  
Riveter, 50 ton Hanna.  
Rotary planer, 50" Cleveland, m. d.

### FOR SALE BY

#### W. E. Brandt Mach'y. Sales,

#### 513 Empire Bldg.,

#### Pittsburgh, Pa.

Brake, 10' x 3' 16" D. & K., press type.  
Boring mill, 10' Niles, 2 heads.  
Bulldozer, No. 4 Williams & White.  
Forging machines, 3", 3", 5" Nat'l.  
Forging machines, 2 1/2" Ajax.

Gear generator, 11" and 18" Gleason.  
Keyseater, No. 2 Baker, 2" keyway.  
Roll, bending 10' x 1 1/2" Cleveland.  
Roll, bending, 8' x 4 1/2" H. & J. type.  
Shear, 12' x 14 ga. Niagara (bargain).

### FOR SALE BY

#### M. A. Wertman Machinery Co., 623 Penton Bldg., Cleveland, Ohio

Grinders, 10 x 50 Nortons (3).  
Grinders, No. 2 B. & S. surface (4).  
Hack saw, 8 x 8 Atkins.  
Lathe, 16" x 8' Reed Prentice Tool-room (2).  
Lathe, 14" x 6' Pratt & Whitney t. a.  
Lathe, 14" x 6' Prentice g h, q. c. g.  
Lathe chucks, 10", 12", 28"

Miller, No. 2 Cincinnati universal.  
Miller, 1" Kempsmith plain.  
Miller, No. 24 Kempsmith univ. (4).  
Nibbler, No. 2 Campbell 24" m. d.  
Planer, 24" x 6' Gray. A1 cond.  
Planer, 48" x 10' Liberty, like new.  
Swager, No. 3 & No. 4 Langelier.

### FOR SALE BY

#### Wigglesworth Machinery Company

#### 199 Bent Street,

#### Cambridge, Mass.

Boring mill, 3 1/2" bar Universal.  
Grinder, No. 14 P. & W. model B.  
Grinder, No. 10 Brown & S. pl. m. d.  
Lathe, 20" x 12' Monarch, grd. hd.  
Miller, No. 3G Hendey universal.

Miller, No. 2 Cincinnati, motor base, rapid traverse.  
Radial drill, 3" American, triple purp.  
Saw, Avey Milband, 6" x 6" m. d.  
Saws, Avey Milband, m. d.

Send for Complete Stock List.

### FOR SALE BY

#### Brownell Machinery Co.,

#### 150 Pine Street, Providence, R. I.

Boring mill, vertical, King 40".  
Drill, radial, Fostick 2 1/2" cone.  
Drill, No. 220 Baker with rotary tbl.  
Gear cutter, No. 1 Whiton, S. & B.  
Hammer, No. 5 Beaudry champion power.  
Lathe, 31" x 28' New Haven.

Lathe, 8" x 60" Lo-Swing..  
Metal sawing machine, 6x6 Peerless.  
Miller, No. 3 Hendey universal.  
Miller, No. 3-M P. & J. automatic.  
Planer, 24" x 24" x 6' Whitcomb sbd.  
Shaper, 20" G. & E. cone.



## USED AND REBUILT MACHINERY

### FOR SALE BY

**H. L. Morton Mchry. Co., 1078 Carlyon Road, East Cleveland, O.**

Boring mills, Bullard Mult-Au-Matics, 6 spindles, 8" machines, 80% new (2).  
Gear cutter, 60"x8" Brown & Sharpe.  
Gear hobber, 5A Lees-Bradner.  
Grinder, chucking, No. 28 Bryant; new in 1931, used 6 months.  
Lathe, 21"x10' LeBlond, q. c. g., cone pulley, m. d.  
Lathe, turret, No. 2 W. & S., bar fd. & collets, power feed to turret, cone pulley.  
Mill, No. 2B heavy Brown & Sharpe plain, s. p. d.  
Nibbler, Campbell No. 2, motor drive.  
Press, No. 21 Bliss, o. b. i., 2 1/2" stroke.

### FOR SALE BY

**Reliance Machinery Sales Company**

**1405 Brighton Place, N. S.**

**Pittsburgh, Pa.**

Air compress., 90 and 342 cu. ft. Ing.  
Brake, press, 72" Rob. toggle m. d.  
Brake and folder, 72" Niagara,  
22 gauge, motor 3-60-220.  
Bulldozer, No. 9 W.-W., 70,000 lbs.  
Drill, 4 spindle Colburn, Mfg. type,  
cap. 2" like new.  
Drill, 25" Prentiss, tapping att.  
Hammer, 80 lb. Brad. cushion helve.  
Hammer, 300 lb. Beaudry upright.  
Lathe, 27"x18" Pittsburgh, taper.  
Lathes, spinning, 30" Bliss & Tol.,  
roller bearing.

Lathe, 18"x12' L. & S., q. c. g., cone.  
Nibbler, No. 1 Gray 34" tht., 3/16"  
capacity, m. d.  
Press, No. 92-C Toledo, dbl. crank,  
geared, 4" shaft 3" str.  
Press, Robinson dbl. cr., 80" wide,  
4" shaft, grd. 3" stroke.  
Saw, hack, 12"x12" Racine, m. d.  
Shapers, 16", 20", 24", 25", 32" crk.  
Shear, double angle, 6x8x3/4" Clev.,  
mounted on turnable, m. d.  
Welders, 300 and 400 amp. Lincoln.  
motor and 3-60-220-v.

### FOR SALE BY

**Wm. C. Johnson & Sons Machinery Co.,**

**1211-1223 Hadley Street,**

**St. Louis, Mo.**

Air compressors, 30' to 2000'.  
Bolt threader, Nat. 2".  
Bolt threader, 2 heads, Nat. 1".  
Boring mill, 8'-9" Betts extension.  
Boring mill, 42" Colburn, (2).  
Boring mill, No. 6 Barret.  
Boring mill, hor. 4 1/2" bar Betts  
knee type.  
Bulldozers, No. 3-4 and 8.  
Drill, radial 3' American.  
Drill, radial 3' Morris round column.  
Drills, Colburn D4.  
Drills, Baker 24".  
Furnaces, various sizes.  
Gear cutter, 60" G.E. spur.  
Gear cutters, No. 1 & 3 Adams hobbors  
Grinder, No. 1 Wilmarth & M. univ.  
Grinder, 12"x72" Landis, m. d.  
Grinders, 13x66 Landis universal.  
Grinders, 16x66 Landis cyl. plain.  
Hammers, 500 & 25 lb. Little Giant.  
Hammer, 300 lb. Bradley.  
Hammer, steam 4000 to 250 lb.  
Hammer, 80 Perfect.  
Keyseater, No. 2 M & M.  
Lathes, turret, No. 3 & 7 universal  
Bardons Oliver.

Lathe, 18"x8' L. & S.  
Lathes, 26"x12 Flather, q. c. g.  
Lathe, turret No. 6 Woods, tilted.  
Lathes, turret, 24" Steinle.  
Lathes, 3 Gridley 24", Model F., 4 sp.  
Miller, Pratt & Whitney spline.  
Miller, No. 4 Brown & S., plain.  
Miller, No. 3 Hendey, plain.  
Miller, Waltham thread.  
Miller, No. 2 Kempsmith, univ.  
Millers, No. 1 U. S. hand.  
Millers, Ingersoll, 27"x24"x10".  
Planer, 36x30x8 Cleveland open side.  
Planers, 60"x48"x10' Gray, 2 heads.  
Planers, 24"x24"x6" Gray, 1 head.  
Planers, 36"x36"x10' Cincinnati.  
Press, No. 2-3 & 4 Marshalltown,  
o. b. i., new.  
Radial drill, 3'-4'-5".  
Saw, No. 14 Higley.  
Saw, No. 2 Marvel.  
Saws, 6x6 Acme.  
Shaper, 16"-20"-24".  
Shear, 3' Niagara, 16 ga.  
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Automatics, Gridleys 2 1/4" (7).  
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Automatics, Cleveland, 4 spindle, 4", Model M Chuckers.  
Automatics, No. 00 B. & S.  
Boring Mill, Cleveland, SPD 2 1/4".  
Broach, American 12 ton Hyd. Vert. Semi-Auto., M. D.  
Buildozer, No. 26 W. & W.  
Drills, 21" & 24" Cincinnati B. (28).  
Drills, Baker Nos 121, 217, 314, 416.  
Drill, Radial 3" Western.  
Drill, Henry & W. 4 sp., No. 2 M.T.  
Furnace, Homo Electric.  
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Grinders, No. 13 B. & S., M. D. (3)  
Grinder, Pratt & Whitney Surface, M. D., B. B. spindle.  
Grinder, No. 7 1/2 Gardner Disc, M. D.  
Grinder, No. 70 Heald Internal (3).  
Grinder, No. 3 Abrasive M. D.  
Grinder, Heim Centerless, M. D.  
Grinder, No. 72 Hyd. Int. Heald, M. D., (3).  
Grinder, No. 2 Cim. Univ.  
Grinders, No. 12A and No. 20 Bryant Chucking.  
Grinder, No. 1 Wilmarth & M. Surf.  
Grinder, Heald, Duplex, Int.  
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Lathe, 16"x6" Hendey SPD.  
Lathe, 18"x8" Hendey BMD.  
Lathe, 20"x8" Cisco TA.  
Lathe, 30"x10" Reed Prentice M. D.  
Lathe, Turret, No. 6 W. & S. Univ.  
Lathe, Turret, No. 5 Foster, Univ.

Lathes, Tur., No. 9 B & O Univ. (2).  
Mills, Nos. 2B & 3B B. & S. SPD.  
Mill, No. 3GH Hendey Univ.  
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Planer, 60"x60"x14' Niles Bement Pond, Box Table.  
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Press, No. 4A Bliss, adj. bed.  
Presses, Nos. P2, P3, P4 Ferracut M. D.  
Press, No. DG53 Ferracut (3).  
Press, No. 21Bliss Cons. Horning (4).  
Presses, 10 & 50 ton Henry & Wright M. D., Auto. Feed.  
Press, No. 1018 Bliss Toggle.  
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24" Coulter Openside Ck. Planer, s.p.d.  
30"x30"x10' American, 1 head.  
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36"x36"x12' Niles m. d., 4 heads.  
36"x16"x14' Liberty, m. d., 2 rail heads, 1 side head.  
42"x42"x12' Niles-Bement-Pond Heavy Pattern, 4 heads, reversing m. d.  
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- 12' Niles, 1 1/8" cap., belt drive.  
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90" Bertsch, 3/8" cap., belt.  
No. 0 62" Hilles & Jones Plate Str., m. d., 3/8" cap.  
No. 2 Southwark Rotary Shear, m. d., cap. No. 8 steel.  
Southwark Rotary Shear, s. p. d, 36" throat, cap. 3/8".  
8' Bliss Power Squaring Shear, 1/4" cap. belted m. d.  
10' Stoll Power Squaring Shear, cap. 3/8", m. d.  
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74" Bertsch Bending Rolls, 3/8" cap.

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- 42"x20' Putnam Geared Head, m. d.  
36"x29' Johnston, 5 step.  
36"x11' American, 4 step.  
30"x20' American Geared Hd, 12 speed.  
30"x14' Lodge & Shipley Patent Head.  
30"x14' Lodge & Shipley, 5 step.  
30"x11' American, 5 step.  
27"x14' American, 3 step taper.  
25" raised to 32"x12' LeBlond, 3 step.  
24"x12' Schumacher-Boye, 3 step.  
24"x12' LeBlond, 5 step.  
24"x11' Chard, 4 step.

- 24"x10' Schumacher-Boye, 3 step.  
24"x10' Lodge & Shipley, d. c. mtr. dr.  
24"x10' Greaves-Klusman, 3 step.  
24"x10' Boye & Emmes, m. d.  
24"x10' American, 3 step.  
24"x8' Hendey Yoke Head.  
22"x10' L. & S., Selective Head, s.p.d.  
20"x12' Lodge & Shipley Patent Head.  
20"x10' LeBlond, 3 step.  
20"x10' Hendey Geared Head, m. d.  
20"x10' Hendey Yoke Head.  
20"x10' Boye & Emmes, 3 step.  
20"x10' American, 3 step.  
20"x8' American, 3 step.  
20"x6' Hendey Geared Head, m. d.  
20"x6' Hendey Yoke Head.  
18"x10' Reed-Prentice Geared Head, m. d., taper.  
18"x10' Lodge & S. Patent Head.  
18"x8' Lodge & Shipley Selective Head.  
18"x8' Greaves-Klusman, 3 step.  
16"x14' Lodge & Shipley Sel-ctive Head, m. d., taper.  
16"x12' Prentice Geared Head, m. c.  
16"x10' LeBlond, 3 step.  
16"x6' Hendey Geared Head, m. d.  
16"x6' Hendey Yoke Head, taper.  
14"x8' Reed-Prentice Geared Hd., m.d.  
14"x8' Lodge & Shipley, 3 step.  
14"x6' Hendey Geared Head, m. d.  
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- No. 2M Cincinnati Vertical, Timken Bearings, National Standard Spindle m. d., in base.  
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No. 2 Cincinnati Plain High Power, m.d.  
No. 3B Milwaukee Plain, double over-arm, m. d.  
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No. 3, 4 Cincinnati Plain, cone.  
No. 3 Kempnath Plain, cone.  
No. 3 Hendey-Norton Plain, cone.  
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# EASTERN MACHINERY CO.

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- 3" American, m. d. on arm.
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- 3 1/2" Carlton H. S. Sensitive, m. d.
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- 5" American Triple Geared, m. d.
- 4" American Triple Geared, m. d.
- 5" Cincinnati Bickford Universal, m. d.
- 5" Reed-Prentice Plain, m. d.
- 5" Bickford Plain, m. d.
- 6" Dresser Universal, m. d.
- 7" Fostick Plain, cone.

## GRINDERS

- 20x144" Landis Plain Cylindrical, m. d.
- P4" Pratt & Whitney Vertical Sur., belt.
- 16x48" Diamond Automatic Surf., m. d.
- No. 2 Diamond Automatic Surface, belt.
- No. 3 Brown & Sharpe Surface, belt.
- 60" Springfield Face, M. D.
- 60" Bridgeport Face, belt.
- No. 78 Wilmarth & Norman Auto. Surface M. D. in base.
- No. 33 Abrasive Vertical Surface, M. D. in base.
- No. 3 Bryant Semi-Automatic Hole, m. d.
- No. 70 Heald Internal, belt.
- No. 72A5 Heald Plain Internal, 2 m. d. hydraulic, very late.
- No. 11 Giddings & Lewis Teromatic, 3 motor drive.

- No. 1 Norton Universal Tool & Cutter, belt.
- No. 2 Oesterlein Universal Tool and Cutter, belt.
- Gisholt Tool Grinder, belt.
- No. 21, 31, 41 Oliver Drill Grinders, m. d. in base.
- No. 3 B. & S. Universal Grinder, belt.
- No. 4 Landis Universal, belt.
- No. 50, 55 60, 65 Heald Cylindrical, belt.
- 6x18", 10x24", 10x36", 10x52, 10x72", 12x36", 12x52", 12x72", 16x32", 16x52", 16x72" Landis Plain Self-Contained Cylindrical, belt and motor driven types.
- 6x32", 10x36", 10x50", 10x72", 12x72", 14x72" Norton Plain Cylindrical, belt and motor drive.
- No. 24-53" Gardner Horizontal Disc Grinder, m. d.
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- 51" Niles, 2 heads.
- 30", 36" Gisholt, belt.
- 36", 42" Bullard Vertical Rapid Prod. type, belt.
- 36" Colburn, gear box, 2 heads.
- 37" Niles Vertical, 2 heads, m. d.

## GEAR MACHINERY

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- No. 12 Barber-Colman Gear Hobber, double overarm.
- No. 6 Fellows Gear Shapers, belt.
- No. 5A Lees-Bradner Gr. Gener., belt.
- No. 3 Brown & Sharpe Gear Cutter, belt.

## PRESSES

- No. 168 Toledo Toggle Drawing.
- No. 1 1/2 Bliss Cam.
- No. 3A Bliss Horning.
- D2, DD2, erracut Dbl. Action Drawing
- P2, P3, P4 Ferracute Stiles type.
- No. 5 Bliss Stiles type.
- No. 6 Waterbury-Farrel Double Crank.
- No. 30 Toledo Stiles type.
- No. 92B Toledo, double Crank.

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No. 3 Oilgear hydraulic.  
No. 3L Lapointe hydraulic.  
15 Ton Oilgear vertical hydraulic.  
10 Ton Metalwood vertical hydr.  
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2 ton American vertical.

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2½' Morris.  
3' Druses.  
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4' Hammon elbow arm.  
4' Mueller.

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No. 6 Fellows shaper.  
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No. 12 Barber Colman.  
Nos. 1 and 5A Lees Bradner.  
6", 11" and 18" Gleason bevel.  
Nos. 3 and 4 Brown & Sharpe.  
48" Newark.  
No. 2 Bilton automatic.

## ENGINE LATHES

14"x6" American geared head.  
16"x6" Monarch.  
16"x8" Lodge & Shipley grd. hd.  
16"x10" Lodge & Shipley grd. hd.  
18"x8" Schumacher Boye.  
20"x8" Monarch.  
22"x10" Davis.  
24"x12" Lodge & Shipley.  
27"x12" Schumacher Boye.  
42"x42" Putnam geared head.

## HORIZONTAL MILLS

2½' Cleveland No. 1.  
3½' Defiance No. 8.  
3½' Landis No. 35 floor type.  
3½' Binsee knee type.

## VERTICAL MILLS

24" Bullard, side head.  
30" Bullard single turret.  
34" Colburn single turret.  
42" Detrick & Harvey.  
60" Gisholt.  
100" Betts.

## GRINDERS

Nos. 72-A-3 Heald Sizematic.  
Nos. 60, 65, 70, 72 & 75 Heald.  
26" No. 16 Blanchard surface.  
30"x72" Springfield surface.  
12"x24" Diamond surface.

12"x48" Diamond surface.  
No. 4 B. & S. universal.  
30"x84" Diamond face  
Landis 6"x18" to 16"x53".  
Norton, 6"x32" to 14"x72".  
18", 24" & 30" Gardner disc.  
30" & 53" Bealy disc.  
16"x48" Landis crank.  
10"x24" & 10"x50" Norton cam.

## MILLERS, Plain

Nos. 1½, 2, 3B, and 4B Brown & S.  
Nos. 1½ B. & S. and 2A Milwaukee.  
Nos. 2, 3 and 4 Cincinnati.  
Nos. 2, 3½ and 4 LeBlond.  
No. 3 Kemp Smith.  
No. 4 Hendey.

## MILLERS, Universal

No. 1½ Rockford.  
No. 2 Hendey.  
No. 3 Cincinnati  
No. 3A Brown & Sharpe.  
No. 3A hvy. Brown & Sharpe.

## PLANERS

24"x24"x24" Cincinnati crank.  
24"x24"x6" Liberty openside.  
27"x27"x6" Smith silk.  
30"x30"x12" Cleveland openside.  
32"x32"x12" Niles.  
36"x36"x8" Gray.  
36"x36"x10" Cincinnati.  
36"x36"x12" Gray.  
36"x36"x16" Cleveland openside.  
48"x36"x10" Liberty openside.

## PRESSES

No. C4 Ferracute O. B. I.  
No. 75 Toledo openback.  
150 ton Ferracute Coining.  
600 ton Cleveland Coining.  
No. 5A Bliss toggle.  
No. 1684 Toledo toggle.  
No. 256 Consolidated cam drawing.  
No. DDG54 Ferracute cam drawing  
Nos. 56½ Toledo.  
No. 74½ Bliss.  
Nos. 64 & 65 Consolidated.  
P3, P4, PG4, PG5 Ferracute.  
No. 25½ Consolidated horn.  
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16" Ohio.  
16" Gould & Eberhardt.  
16" Cincinnati.  
24" Walcott.  
24" Potter & Johnston.  
24" Gould & Eberhardt.

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NO. 94F TOLEDO, Double Crank Tie Rod Frame, Equipped with Air Cushions, 12" Stroke, 32" Die Pad. Twin Geared, Double Back Gd. Bolster 72"x36" with Belted A. C. Motor Drive.

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NO. 69D NIAGARA, Double Crank, Single Back Geared, Tie Rod Frame, 6" stroke, 18" Die Space, Air Cushions, Bolster 60x36 with A. C. Belted Motor Drive.

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BLISS, Double Crank Overhanging Press, Back Geared, Belt Drive Press similar to No. 21 Bliss.

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12" Robinson Press Brake 1/2" cap.  
66" Ohl. Press Brake 12" gap.  
96" Chicago 3/16 Power Finger brk.  
72" Power Sq. Shear 14 ga.  
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### GRINDERS

Diamond surface 16"x48" table.  
Double disc grinders—all sizes.

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14"x6' Rockford q. c. Tool Room.  
14"x 6' Lodge & Shipley q. c.  
16"x8' Monarch geared head m. d.  
18"x10' L. & S. sel. grd. head, (3).  
26"x12' Bridgeford, q. c.  
30"x14' Niles S. B. Grd. Cone.  
30"x20' Niles S. B. Grd. Cone.  
36"x14' American triple geared.  
32"x12' Boye & E. cone head q. c.  
36"x36' LeBlond q. c. motor drive.  
44"x20' Lodge & Shipley c. d., q. c.

### PRESSES

No. 21 & 21 1/2 Bliss Inclinal.  
Ferracute dbl. crank Gap Housings

92C Toledo dbl. cr. 42" Bet. Housings

### PLANERS AND SHAPERS

20" G. & E. Shaper, Cone Drive.  
20" Cincinnati Shaper Cone Drive.  
36"x12' Gray Planer 2 Heads.  
36"x14' American Planer 2 Heads.  
60"x14' Gray 2 Heads.

### MILLING MACHINES

No. 2 B. & S. Plain Cone Drive.  
No. 34 Oesterlein plain, cone drive.  
No. 2 Brown & Sharpe, universal.  
No. 4 LeBlond plain 3 step cone.

### MISCELLANEOUS

Boring Mill, 60" vertical.  
4 Spindle Barnes Camel back drill.  
Bolt cutter, 14" & 2" Acme.  
Gear cutters, Nos. 3, 4 B. & S.  
No. 1 LeBlond Tool & Cutter Grnd.  
Radial, 4' Hammond, sensitive.  
Radial 6' Drees, s. p. drive.  
Straightening rolls, 54" H. & J.  
16"x66" Landis Plain Grinder.

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Front & Pike Sts., Cincinnati, Ohio

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## BORING MILLS — Horizontal

Niles-Bement-Pond No. 1 portable.  
Beaman & Smith 5" and 6" bar.  
Ryerson No. 12, 4" bar.

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Brown & S. No. 0, 00, 0G, 2, 2G.  
Gridley 9/16", 7/8", 1", 1 1/8", 1 1/4", 1 1/2", 1 3/4", 2".  
New Britain Nos. 22, 24, 33, 454.  
Potter & Johnston Nos. 6A and 7A.  
Cleveland 2", 3 1/4", 3", 3 1/2" model A.

## GEAR CUTTING EQUIPMENT

Brown & Sharpe No. 3—26, No. 3—36, No. 5—50" Gear Cutters.  
Fellows No. 6, 61, 615 gear shapers.  
Fellows Nos. 7, 71, 712 gear shapers.  
Fellows No. 8B planisher.  
Lees Bradner planisher.  
Gleason 24" gear planers.  
Harber Colman Nos. 2, 3 12 hobbors.  
Cleveland 8 spindle gear hobber.

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Bullard 24".  
Niles Bement Pond 42", 44", 52".  
Niles 7-10" Extension.  
Pond 90".

## GRINDERS

Heald No. 72 Hydraulic.  
Cincinnati No. 3 Centerless.

## LATHES

Pittsburgh 50"x73" grd. hd.  
Putnam 50"x30" grd. hd.  
Putnam 36"x28" grd. hd. nearly new.  
Pittsburgh 36"x38" grd. hd.  
Lodge & Shipley 36"x16" grd. hd.  
American 36"x21" grd. hd. Q. C. G.  
Bridgeford 36"x60" boring & turning.  
Bridgeford 36"x60" boring.  
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McCabe 24-48"x14" double spindle.  
LeBlond 25"x12" cone drive.  
Greaves Klusman 16"x8" m. in base.  
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Porter Cable 9x14.  
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## MILLING MACHINES

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Recker No. 4B, C-1 and C vertical.  
Pratt & Whitney 6x14.  
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Cincinnati Bickford 6' pl.  
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An assortment of 1, 2, 3, 4 and 6 sp. high speed ball bear. drill presses.  
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36"x14" Boye & Emmes, cone, q. c.  
36"x20" Bradford cone, Loose Chge.  
28"x48"x10" Harrington, Slid. Bed.  
26"x14" Bridgeford Grd. Hd. S. P. D.  
12"x16" Bridgeford Grd. Hd. S. P. D.  
42"x18" Bridgeford Grd. Hd. S. P. D.  
24"x10" Greaves Klusman Grd. Hd. S. P. D.  
24"x10" American Grd. Hd. S. P. D.  
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16"x48" & 72" Landis Crankshaft.  
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42" Colburn Vertical Mill Rap. Trav.  
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Mill, Rapid Traverse.  
42" Niles Boring Mills, 2 heads.  
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No. 3 LeBlond H. D. Plain.  
No. 3 Kempsmith Universal.  
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14"x6' American geared head T.A.  
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18"x10' American geared head.  
20"-224"x8', 14' L. & S. sel. g. h.  
24"-274"x12', L. & S. sel. g. h.  
25"-27"x26' LeBlond.  
36"x18' L. & S. Patent hd.  
36"x30' Rahn-Larmon grd. hd.  
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No. 4 Kempsmith Maximiller.  
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24"x24"x12' Gray.  
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36"x36"x8', 18' Cincinnati.  
36"x36"x12' and 24' Gray.  
36"x36"x14' - 24' Cleveland o.s.  
42"x42"x30' N-B-P, Rev. m. d.  
48"x48"x14' Liberty, upside.  
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**HONING MACH.;** Hutto 2-spindle Vert. M. D.

**KEYSEATERS;** M & M No. 0 vert. Burr horiz.

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- 18" x 8" Whitcomb-Blaissdell Cone.
- 20" x 8" American Cone.
- 24" x 12" American Cone.
- 24" x 12" Putnam Q. C. G. Cone.
- 24" x 19" American L. C. G.
- 26" x 10" Boye & Emmes CQG Cone.
- 28" x 17" Chard, Grd. Hd.
- 30" x 12" S & B Cone, T. A.
- 36" x 16" Bridgeford AC M. D.
- 36" x 26" L & S cone Q. C. G.
- No. 1 N. B. P. 42" Carwheel.
- 42" x 30" Bridgeford Grd. Hd.
- 60" x 36" Pittsburg Grd. Hd.
- 64" x 18" Bement-Miles Cone.

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- 48" Cincinnati Duplex.
- 8" & 12" Pratt & Whitney.
- 28" Cincinnati Semi Automatic
- No. 7H Becker.

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- Model B Becker feeds 36x14x15, spd.
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## MILLERS, Plain

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- No. 3G Hendey Grd. Hd.

## No. 2B Heavy, B. & S.

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- No. 2 Brown & Sharpe Cone.
- No. 2BS Milwaukee Grd. Hd. M.D.

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- 48" x 48" x 10" D & H Openside.
- 48" x 36 x 10" Cincinnati.
- 42" x 36" x 12" & 24" x 6" Cincinnati, M.
- 30" x 30" x 10" D & H Openside.
- 17" x 17" x 4" Whitcomb M. D.

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- 17" x 1 1/2" Niles A. C. m. d.
- 10" x 1 1/2" Bertsch, pyr.
- 8" x 1 1/2" Pyramid.

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- 10x10 Napier Metal Band Saw.
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- 6" Peerless univ., shaping.
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- No. 4B Cochrane & Bly.

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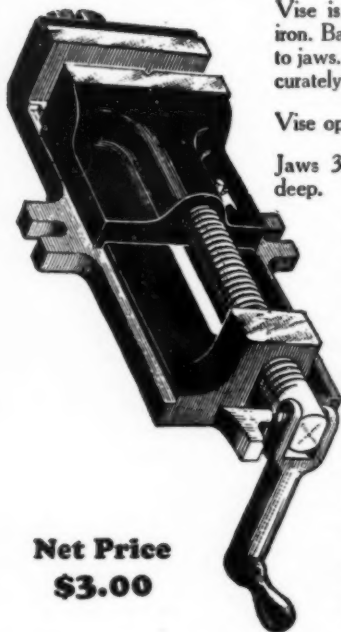
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72" Colburn.  
52" Gisholt.  
48" Colburn.

60", 42" Bullard.  
24"-36"-42" Bullard New Era  
Vertical Turret Lathes.  
No. 0 Giddings & Lewis, 3½" bar.

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No. 4-S Cincinnati Plain.  
No. 4 Cinc. Rectangular overarm.

No. 3 Kempnith Plain.  
No. 15 Garvin Vertical.  
No. 2 LeBlond Universal.

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36"x12' Lodge & Shipley. 20"x10' Lodge & Shipley.  
32"x17' Houston Stanwood & G. 20"x8' American.

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Drill 36" and 42" Cincinnati-Bickford Tapping.  
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Grinders, No. 3 Bryant.  
Planer, 60"x54"x16' Woodward & Powell, three heads.  
Shear, No. 2 Hilles and Jones Gate, 28" gap, 74"x¼".  
Turret Lathes, 4"x34" J. & L.—Bar and Chucking—Steel Head.  
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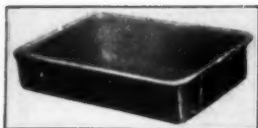
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 Drills, 1, 2, 3 & 4-spindle ball bearing.  
 Gear Hobber, No. 5-A Lees-Bradner.  
 Grinders, No. 60 Heald Int.; No. 52  
 Hydro-Greenfield, Internal.  
 Lathes, 14x6 & 16x6, Hendey, Cinc.,  
 Adv. q. c., 16x8, 20x8 Monarch,  
 LeBlond q. c. g., taper attachment,  
 20x10 Prentice, G.H.; Q.C.; T.A.  
 21"x8" LeBlond H. D., Q. Ch. G.

20"x8" Ryer-Contradon, m.d. g.h.  
 Millers, No. 1 1/2 Valley City Univ. D.H.  
 No. 35 Ohio Universal Equipment.  
 No. 3 Brown & Sharpe Plain.  
 No. 2 Kemp, Univ. Div. Hd. Eqpt.  
 Nibbler, No. 1 Campbell 6" Thr. at.  
 Planer, 36x36x10" Gray 2 heads.  
 Punch Presses, No. 16 Bliss Horn.  
 No. 3 Walsh O. B. I. (2).  
 Shapers, 16, 24, 28" Mil. & G. & E.  
 Turret Lathes, No. 1 Acme univ. s.p.d.  
 Welders, 15 & 100 K. W. Butt.

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 1100 lb. sgl. frame steam Forg. Ham.  
 24" Gould & Eberhardt Shaper.  
 26"x11" Wickes D. B. G. Hvy. Duty  
 12"x10" Chi-Pneu. M.D. Air Comp.  
 10"x1" Wickes Bend. Rolls Pyr. Type.  
 8x8x1" H. & I. Angle Sh. on turntbl.  
 10"x3/8" Niagara Sq. Shear, m. d.  
 6" Merrell Cutting & Thread. Mch.  
 Lennox Rotary Bevel Shear, 3/4" cap.

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 30" Bullard Mill, Turret Head.  
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 No. 3 B. & S. Automatic Gear Cutter.  
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Miller, K. & T. No. 1 S. P. D.  
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Shear, Niagara No. 230 power, 16 ga.  
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13-B Brown & Sharpe Miller s.p.d.  
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1x5 New Britain 6 spdl. Auto.  
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18x10 Chard Lathe.  
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12" Niles Slotter.

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16x52 Landis Ext. arr. for m. d.  
No. 2 H. & S. Surface Grinder.

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Shaper, 26" Smith & Mills, geared.  
Shaper, 16" Gould & Eberhardt, geared.  
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 Grinder, No. 2 Reid surface, m. d. J  
 Grinder, No. 2 Norton univ. T. & C.  
 Grinder, No. 3 Wilmarth & Mor. surf.  
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 Grinder, No. 60 & 85 Heald internal.  
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 Lathe, 13' x 5' South Bend, q. c. g.  
 Lathe, 14' x 6' Hendey & Rock., q. c. g.  
 Lathe, 14' x 6' Lodge & Shipley, q. c. g.  
 Lathe, 14' x 8' Rockford q. c. g.

Lathe, 16' x 6' American, q. c. g.  
 Lathe, 16' x 8' Lodge & Shipley, q. c. g.  
 Lathe, 18' x 8' Lodge & Shipley, q. c. g.  
 Lathe, 18' x 8' Hendey, q. c. g.  
 Lathe, 20' x 8' Hamilton, q. c. g.  
 Lathe, 20' x 10' S. B. & Emmes, q. c. g.  
 Lathe, 21' x 12' S. & Boye, q. c. g.  
 Lathe, 28' x 10' Hamilton, q. c. g.  
 Lathe, No. 6 Bliss spinning.  
 Miller, No. 14 C. & Bly; univ. m. d.  
 Miller, No. 1A K. & T.; dbie. o. a.  
 Miller, No. 2B K. & T. sgle. o. a.  
 Miller, No. 2 Kemp, pl. maximiller.  
 Miller, No. 1 B. & S. vert. pwr. hd.  
 Miller, 1-M Cincinnati vertical.  
 Miller, No. 4 Cincinnati plain.  
 Miller, 24 Rockford universal.  
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 Press, 200 ton Ferracute Toggle.  
 Press, No. 4A Bliss horn; adj. tbl.  
 Press, No. 744 Bliss, grd; tie rod.  
 Presses, Nos. 3 & 4 Rock; o. b. i.  
 Saw, No. 8 Marvel band, M. D.  
 Saw, No. 6 Marvel & Racine, h. s.  
 Saw, 6' x 6' Peerless high speed.  
 Shapers, 20' G. & E.; & Milwaukee.  
 Shapers, 24" Cincinnati.  
 Shaper, 24" Stock. & American, m. d.  
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- No. 4 LeBlond Heavy Duty Plain Miller, S. P. D.  
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 16", 20" and 24" G. & E. Shapers, gear box, S. P. D.  
 20" Stockbridge Shaper, cone drive.  
 27" x 10' American, G. H., M. D.  
 18" x 8' Reed Prentice Geared Head Lathe, S. P. D.  
 No. 11 B. & S. Plain Grinder, overhead M. D.  
 No. 3 B. & S. Universal Grinder, overhead belt drive.  
 6' American Plain Radial Drill M. D. on arm.  
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| 14" Steptoe Shaper.          | 19" x 10' Sidney Lathe.          |
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| 24" G. & E. Gear Box Shaper. | No. 2 Knight Vertical Miller.    |
| 12" x 5' Worcester Lathe.    | 9" x 9" Peerless Saw.            |
| 13" x 4' South Bend Lathe.   | 24" Cincinnati Drill Press.      |
| 14" x 6' LeBlond Lathe.      | No. 216 Baker Hvy. Duty Drill.   |
| 16" x 8' LeBlond Lathe.      | No. 310 Baker Hvy. Duty Drill.   |

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### Boring Mills — Vertical

- 10' Niles, 2 swivel heads.  
 62" Bullard, Standard, m. d.  
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- 64" Bar, NBP, Motor Drive  
 34" Bar, Landis, No. 35, Motor Dr.

### Grinders and Millers

- 14" x 72" Norton, Plain, M. D.  
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### Lathes

- 66" x 30' Johnson, cone dr., hvy. duty.  
 60" x 30' Pittsburgh, Motor Drive.  
 28" x 18' Chard, motor drive.

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- 84" x 84" x 20' Bement M. & H., M.D.  
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### Slotter

- 34" NBP Crank Slotter, M. D.

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12"x6' Monarch, quick change. 20"x10' Bradford.  
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Nos. 1 and 3 Woods-tilted. 1 1/2" cap. Smurr & Kamen.  
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### SHAPERS

16" B. G. Queen City. 25" Smith & Mills.  
20" Smith & Mills. 14" Niles travelling head.

### DRILLS

Baush No. 1, multiple spindle. 6' ceiling.  
32" Hoefer, sliding head. 4, 24" Foote-Burt, single base.

### MILLING MACHINES

No. 1 1/2 Valley City, plain. No. 2 Brown & Sharpe, heavy.  
No. 4 LeBlond plain. 24"x20"x8' Ingersoll.

### MISCELLANEOUS

Band saw, Clark, compound. Press, Cam Drawing, No. 24 Toledo  
Gear miller, No. 1 Bilton. Sand Blast, Boland.  
Planers, Gray, 36" and 42". No. 20 Bryant grinders (5).  
Press, No. 2 Toledo O. B. I. Press, No. 75 O. B. Toledo.

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3" Barnes table type horizontal boring mill ..... \$200.00  
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6"x6" Peerless high speed hack saw ..... 140.00  
Rudolph and Krummel power screw press, 4" stroke ..... 100.00  
No. 2A American Can. o. b. i. press, 3" stroke ..... 225.00

#### BORING MILLS

5" Detrich & H. floor type, M. D.  
4" Feedick floor type.

#### LATHES

16"x8' Lodge & Shipley, grd. head.  
16"x8' Bradford, q. c. g.; taper alt.  
16"x8' Seneca Falls; q. c. g.  
16"x8' Bradford, quick change grs.  
16"x8' LeBlond q. c. g. chucks.  
18"x8' Boye & E. quick change gear.  
18"x10' Boye & E. q. c. g.; taper alt.  
18"x10' Bradford, quick change grs.  
28"x12' Boye & E. q. c. g.; taper alt.  
Hardinge, Rivett, & Elgin bench.

#### DRILL PRESSES

24" Snyder back grd. power feed.  
No. 2 Avey, 14 1/2" overhang.  
3 spindle Allen ball bearing. pwr. feed.  
No. 2 Avey, tapping attachment.  
14" Allen ball bearing.  
2 spindle Leland Gifford.

#### SHAPERS

16" Rockford back geared.  
17" Smith & Mills, back geared.  
20" Ohio back geared.  
20" Steptoe back geared.

#### MILLING MACHINES

No. 3 A. B. & S. Univ., m. d. Comp.  
No. 3 Cincinnati plain.  
No. 2 1/2 B Milwaukee vertical.  
Pratt & Whitney bench.  
No. 3 Burke bench.

#### MISCELLANEOUS

8' Hendley & Whittemore roll.  
No. 2 W. & S. Hand Screw Machine.  
90 ampere arc welder.  
Covel hd. feed surface grinder, m. d.  
Rhodes Slotter, 3 1/2" stroke.  
Bolt Cutter, 3" Acme sgle. head.  
Die filing machines, motor drive.  
No. 15 Cr'nerd arbor press, port.  
No. 8, 20" Besley disc grinder.

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CHICAGO, ILL.

# KINSEY

## Guaranteed Factory Rebuilt Tools

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Putnam 64"x37" grd. hd. lathe; m. d.  
Fisfield 40"x24", rais. blocks, belt drive.  
Bradford 24"x12" lcg lathe; grd. fd.; c. d.  
Reed 24"x12" l.c.g.; s. b. g.; belt cone dr.  
Reed center dr. Axle Lathe; m. d.  
Bradford 20"x10" lcg lathe; grd. fd.; c. d.  
Bradford 20"x8" q.c.g.; taper att.; c. d.  
LeBlond 18"x10" Late Type; with  
turret; c. d.  
Bradford 18"x8" lcg lathe; grd. fd.; c. d.  
LeBlond 18"x8" l.c.g.; d.c. mtr. driven.  
LeBlond 17"x6" Mfg. Type; cone dr.  
Bradford 16"x8" hd. q.c.g. lathe; c. d.  
Willard 12"x6" semi-q.c.g. lathe; c. d.  
LeBlond No. 9 Multi-cut lathe, s. p. d.  
Chard 16"x8" q. c. g. Lathe; c. d.  
McCabe 50"-27" dble. spindle Lathe,  
d. c., m. d.

### SHAPERS

26" Smith & Mills b. g. shaper; grd. m. d.  
28" G. & E. b. g., s. p. d.  
25" Smith & Mills plain, b. g., cone dr.  
24" Cincinnati, b. g., cone drive.  
22" Ohio, b. g., cone drive.  
Barker 16" pl. crank shaper; cone dr.  
12" Smith & Mills plain crank, b. d.

### MISCELLANEOUS

Atkins No. 3 metal cutting band saw,  
belt drive.  
Racine 6"x6" cab. base saw; b. d. wet.  
Racine 13"x13" hack saw, belt drive.  
6"x6" Peerless H.S. Saws, b. d.  
4½"x4½" Napier horiz. hack saw, b. d.  
Fosdick No. 2-A horiz. floor type bor.  
mill, b. d.  
Universal 3" dia. bar, hor. bor. mill, m. d.  
Lucas 4" dia. bar horiz. boring mill, m. d.  
Grand Rapids No. 4 drill grinder, m. d.  
Ohio No. 3 cutter & tool grinder; b. d.  
Cinti No. 1½ cutter & tool grinder; bd.  
LeBlond No. 1 cut. & tool grinder; bd.  
Bertsch 10"x10" Press Brake, motor dr.  
American Can Co. No. 20. b. i. Press b. d.  
Toledo No. 3 o. b. i. Press; b. d.  
Pangborn sand blast equip.; like new.  
Niagara No. 252 power squar. shear;  
14 ga. x 52"; b. d.  
J. & L. 2 spdl. turret lathe, g. hd.,  
chuck, s. p. d.  
B. & O. No. 8 turret lathe, bar, b. d.  
Gisholt 21" tilted type turret lathes,  
m. d. (2).  
Chicago 9"x8" Air Comp.; b. d.

Bellevue No. 14 indus. furn.; oil burning  
P. & W. thread mill; 6"x48"; b. d.  
Theil die filing machine, motor driven.

### PLANERS

60"x60"x14" Cincinnati; 2 hds.; b. d.  
55"x55"x30" Betts, spur geared 2 hds.  
on rail, motor drive.  
36"x36"x16" Gray planer, 2 hds.; bd.  
32"x32"x10" Gray planer; 2 hds.; bd.  
32"x32"x14" Gray planer, 2 hds.; bd.  
30"x30"x18" Gray planer, 1 hd.; bd.  
26"x26"x10" Gray; 2 hds.; m. d.  
26"x26"x6" American, belt drive.

### MILLING MACHINES

Rockford No. 1½ plain miller; p. l.; b. d.  
Ingersoll 30x30x20" milling machine;  
5 heads, m. d.  
Cincinnati No. 4, 3, 2 pl.; cone dr.  
Becker No. 6 vertical h. d.; cone dr.  
Brown & S. No. 1Y Pl. Miller Cone Dr.  
Brown & S. No. 0Y Pl. Miller cone dr.  
Garvin No. 12 Miller; c. d.

### GRINDERS

Gardner No. 2 b. b. disc grinder; b. d.  
B. & S. No. 26 plain cylindrical; b. d.  
B. & S. No. 11 plain cylindrical; b. d.  
No. 2 Diamond surf. grinder, motor dr.  
Ott No. 8 plain cyl. Grinder; 6"x18";  
belt drive.  
Modern 12"x24"; pl. cylindrical; b. d.  
Heald No. 60 Internal Grind.; b. d.  
Landis No. 1½ universal & tool; b. d.  
Heald No. 65 Internal gr.; b. d.

### DRILLS, Radial & Sensitive

American 3" triple purp. radial; s. p. d.  
American 6" triple pur. radial drill, m. d.  
Bausch 8-sp. multi drill; No. 3 mt; sp. d.  
Fairbanks 20" stat. hd. drill; bg; pf; bd.  
Fosdick 3" Radial; 46" arm; s. p. d.  
8-spindle Moline hole drill, cone drive.  
3½" Cinti-Bick. RC radial, d. c., m. d.  
Cinti-Bick. 3" radial dr.; d. c. with mtr.  
Mueller 4" radial, extend. column, s. p. d.  
Fosdick 5" box column radial, s. p. d.  
Colburn No. 2 hi duty; t. & l. pul. dr.  
Baker No. 310 hvy. duty, belt driven.  
Foote-Burt hd. prod. 4-spin. drill; pf;  
s. p. d.  
Foote-Burt No. 25 h. d.; sgl. pul. dr.  
Foote-Burt 4-spindle rail type; b. d.  
Barnes camel back 2-spindle; belt dr.  
Barnes 3-spindle 20"; p. f.; belt dr.  
Avey No. 3 b. b. sens. drill; m. d.  
Avey No. ½ high speed 6-sp. drill; b. d.

# THE E. A. KINSEY CO.

333 West Fourth St.,

Est. 1886

Cincinnati, O.

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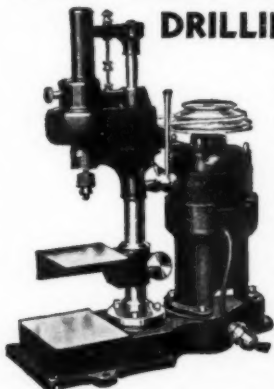
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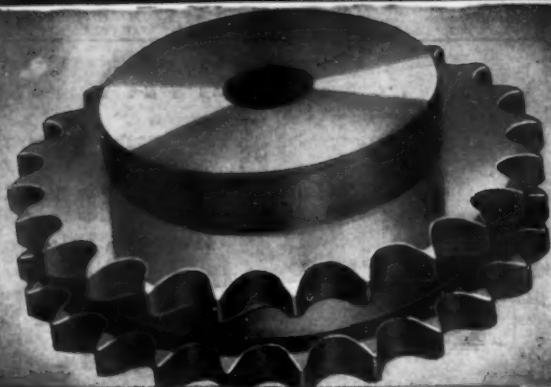
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